

Service Manual

Stereo Integrated Amplifier

Amplifier

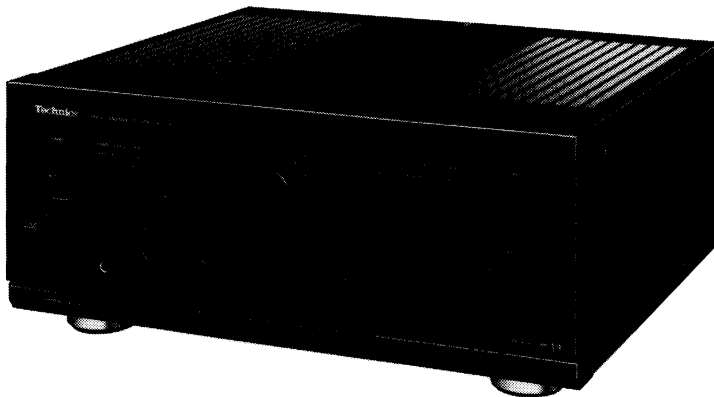
SU-V900

Color

(K)... Black Type

Area

Country Code	Area	Color
(E)	Continental Europe.	(K)
(EB)	Great Britain.	(K)
(EG)	F.R. Germany and Italy.	(K)



SPECIFICATIONS (DIN 45 500)

■ MAIN AMP. SECTION

20 Hz~20 kHz continuous power output both channels driven	2 × 100 W (8 Ω) 2 × 140 W (4 Ω)
1 kHz continuous power output both channels driven (THD: 1 %)	2 × 110 W (8 Ω) 2 × 160 W (4 Ω)
63 Hz~12.5 kHz continuous power output both channels driven (0.7 %)	2 × 105 W (8 Ω) 2 × 145 W (4 Ω)
Total harmonic distortion (Power Amp Direct input)	
rated power at 20 Hz~20 kHz	0.005 % (8 Ω) 0.007 % (4 Ω)
half power at 20 Hz~20 kHz	0.003 % (8 Ω)
Intermodulation distortion	
rated power at 50 Hz: 7 kHz=4:1, SMPTE, 8 Ω	0.005 %
Residual hum and noise	0.3 mV
Damping factor	110 (8 Ω), 55 (4 Ω)
Headphones output level and impedance	680 mV/330 Ω
Load impedance	
A or B, Bi-Wiring	4 Ω~16 Ω
A and B	8 Ω~16 Ω

■ PRE AMP. SECTION

Input sensitivity and impedance	
PHONO MM	2.5 mV/47 kΩ
PHONO MC	250 μV/220 Ω
TUNER, CD, TAPE 1, TAPE 2, DAT	150 mV/22 kΩ
POWER AMP DIRECT	1 V/18 kΩ
Phono maximum input voltage (1 kHz, RMS)	
MM	170 mV
MC	16 mV
S/N	
rated power (4 Ω)	
PHONO MM	79 dB (IHF '66: 88 dB)
PHONO MC	69 dB (IHF '66: 72 dB, S=250 μV)
TUNER, CD, TAPE 1, TAPE 2, DAT	99 dB (IHF '66: 104 dB)
POWER AMP DIRECT	107 dB (IHF '66: 115 dB)
-26 dB power (4 Ω)	
PHONO MM	77 dB
PHONO MC	67 dB
TUNER, CD, TAPE 1, TAPE 2, DAT	87 dB
50 mW power (4 Ω)	
PHONO MM	75 dB
PHONO MC	67 dB
TUNER, CD, TAPE 1, TAPE 2, DAT	79 dB

Technics

Matsushita Electric Industrial Co., Ltd.
Central P.O. Box 288, Osaka 530-91, Japan

Frequency response
PHONO MM

RIAA standard curve
±0.2 dB (20 Hz~20 kHz)

TUNER, CD, TAPE 1, TAPE 2, DAT

0.8 Hz~150 kHz (+0, -3 dB)
+0 dB, -0.2 dB (20 Hz~20 kHz)

POWER AMP DIRECT

0.8 Hz~150 kHz (+0, -3 dB)
+0 dB, -0.2 dB (20 Hz~20 kHz)

Tone controls**BASS** 50 Hz, +10 dB, -10 dB**TREBLE** 20 kHz, +10 dB, -10 dB**Loudness control (volume at -30 dB)** 50 Hz, +9 dB**Output voltage****TAPE 1, TAPE 2, DAT REC OUT** 150 mV**Channel balance, CD 250 Hz~6,300 Hz** ±1 dB**Channel separation, CD 1 kHz** 50 dB**■ GENERAL****Power consumption**

920 W

Power supply**For Continental Europe and F.R. Germany**

AC 50 Hz/60 Hz, 220 V

AC 50 Hz/60 Hz, 240 V

For Great Britain**Dimensions (W × H × D)**

430 × 183 × 436 mm

(16-15/16" × 7-7/32" × 17-5/32")

Weight

21 kg (46.2 lb.)

Notes:

- Specifications are subject to change without notice.
Weight and dimensions are approximate.
- Total harmonic distortion is measured by the digital spectrum analyzer.

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■ BEFORE REPAIR

- Turn off the power supply. Using a 10Ω, 5W resistor connect both ends of power supply capacitors (C551A, C552A, 12000μF) in order to discharge the voltage.
- Before turning the power supply on, after completion of repair, slowly apply the primary voltage by using a power supply voltage controller to make sure that the consumed current at 50Hz in NO SIGNAL mode should be shown below with respect to supply voltage 220V/240V.

Power supply voltage	AC 220V	AC 240V
Consumed current 50Hz	110~430mA	100~390mA

■ PROTECTION CIRCUITRY

The protection circuitry may have operated if either of the following conditions is noticed:

- No sound is heard when the power is switched ON.
(The current drive indicator of the operation indicator is not illuminated.)
- Sound stops during a performance.

The function of this circuitry is to prevent circuitry damage if, for example, the positive and negative speaker connection wires are "shorted", if speaker systems with an impedance less than the

indicated rated impedance of this unit are used, or if DC voltage appears in the output.

If this occurs, follow the procedure outlined below:

- Switch OFF the power.
- Determine the cause of the problem and correct it.
- Switch ON the power once again.

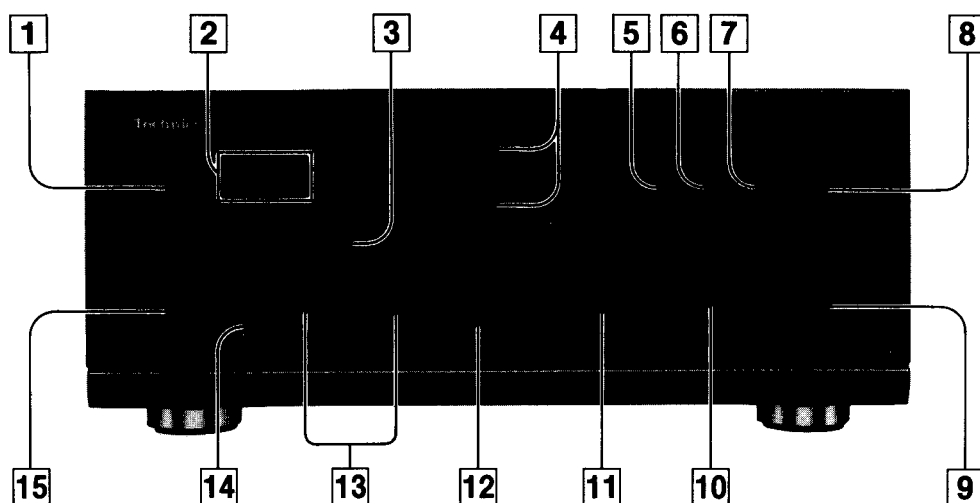
Note:

When the protection circuitry functions, the unit will not operate unless the power is first switched OFF and then ON again.

■ ACCESSORY

- AC power supply cord 1
- [SFDAC05E03 (E), (EG)]
- [SJA193 (EB)]

FRONT PANEL CONTROLS AND FUNCTIONS



1 Power switch (power)

2 Operation indicators (amplifier operation monitor)

These indicators illuminate to indicate the operating condition of this unit.

voltage control:

When the power is switched ON, this indicator illuminates when the unit is in the operation condition.

current drive:

When the power is switched ON, this indicator illuminates after about 4 seconds when the unit is in the operation condition.

If an abnormal condition in the circuitry is detected, such as DC voltage appearing in the output, or a short-circuit of the positive (+) and negative (−) wires from the speaker terminals, the protection circuit functions and this indicator does not illuminate.

3 Tone control switch (tone control)

This switch is used to turn the tone control circuit (bass, treble) on or off.

4 Volume control/indicator (volume)

There are two types of volume scale indications: one for when the power amplifier direct switch is OFF, and one for when it is ON (Indicator will illuminate.).

5 Loudness switch (loudness)

This switch is used when listening to music at a low volume level. Auditory perception of sound in the low frequency range falls off at low volume, but when the switch is set to the "on" position, this deficiency is compensated for, so that the full impact of the musical performance can be enjoyed.

6 Mode selector (mode)

This selector is used to select stereo or monaural operation.

7 Adaptor switch (adaptor)

This switch is used when enjoying music by changing the sound quality with the graphic equalizer, etc.

8 Phono cartridge selector (phono selector)

This selector should be set to the position which corresponds to the type of cartridge used on the turntable.

9 Input selector (input selector)

This selector is used to select the sound source to be heard, such as a disc, radio broadcast, etc.

10 Recording output selector (recording selector)

This selector is used to select the sound source to be recorded by the connected tape deck 1, tape deck 2 or DAT.

11 Balance control (balance)

This control is used to adjust the left/right volume balance.

12 Power amplifier direct switch (power amp direct)

This switch is used to listen to the sound from a component connected to the "POWER AMP DIRECT" terminals.

When this switch is pressed inward to the "on" position, a superior level of tone quality can be obtained, because the signals from the component connected to the "POWER AMP DIRECT" terminals are sent directly to the volume control and power amp section of this unit. The mode selector, loudness switch, balance control and tone control circuit are bypassed.

13 Tone controls (bass/treble)

The bass control is used to adjust the low-frequency sound range, and the treble control is used to adjust the high-frequency sound range.

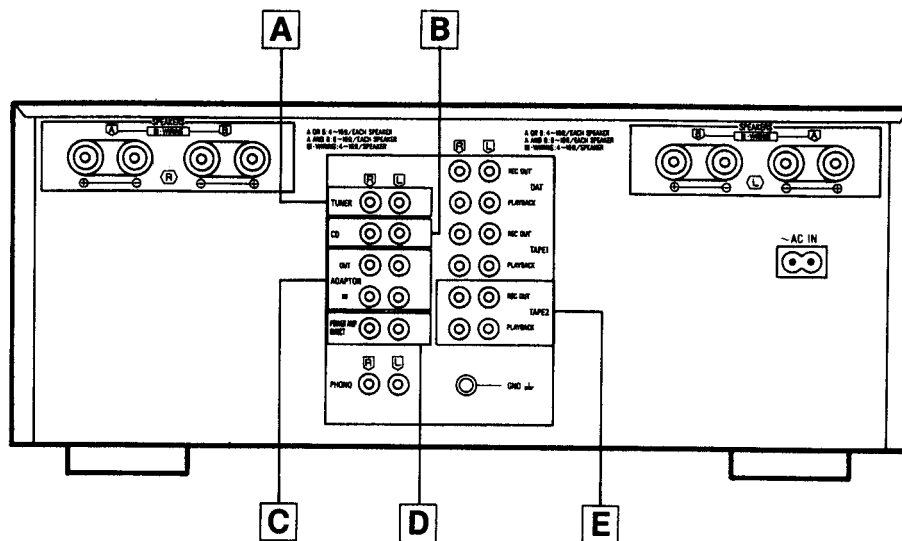
14 Headphones jack (phones)

15 Speaker selector (speakers)

This selector is used to turn the speaker systems on and off.

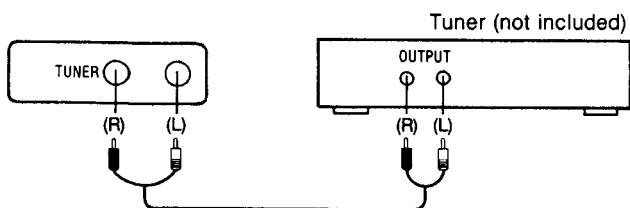
CONNECTIONS

Make connections to each component in the system by using stereo connection cables (not included).



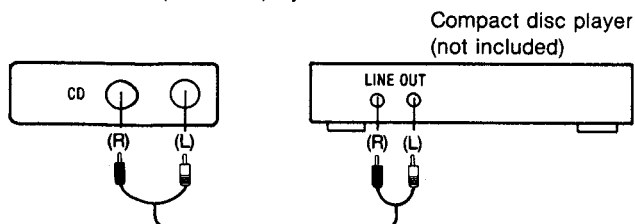
A "TUNER" terminals

Connect a tuner.



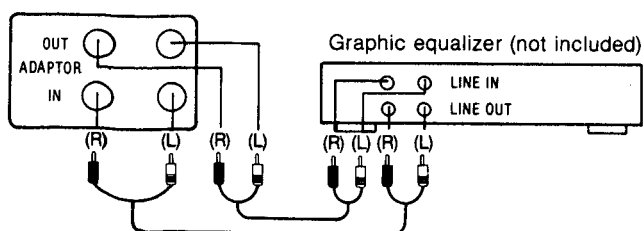
B "CD" terminals

Connect a compact disc player.



C "ADAPTOR" terminals

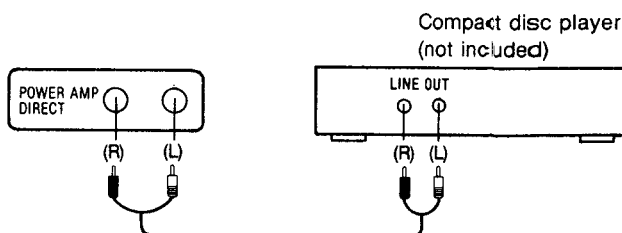
Connect a graphic equalizer.



D "POWER AMP DIRECT" terminals

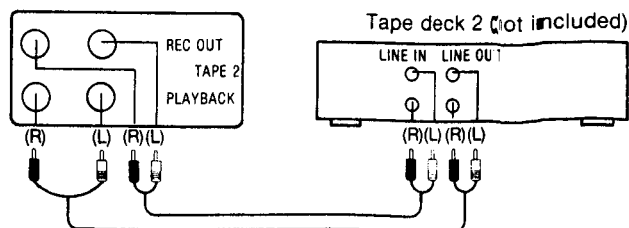
Connect a compact disc player.

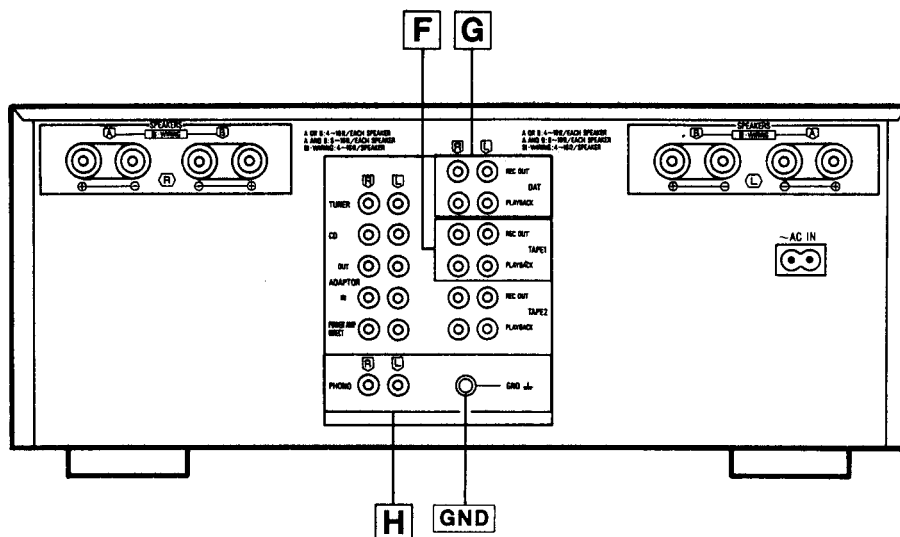
A superior level of tone quality can be obtained because the signal from these terminals are sent directly to the volume control and power amp section of this unit. The sounds from a component connected to these terminals cannot be recorded.



E "TAPE 2" terminals

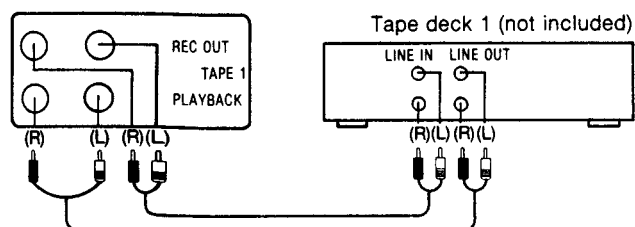
Connect a video cassette recorder (for audio only) or a second tape deck.





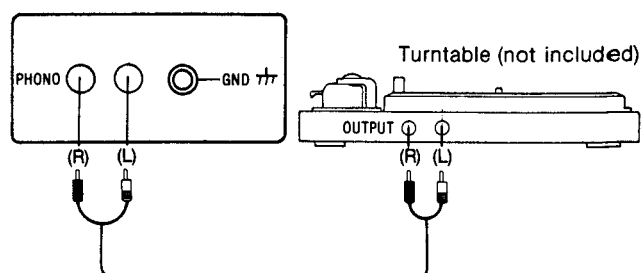
F "TAPE 1" terminals

Connect a first tape deck.



H "PHONO" terminals

Connect a turntable.



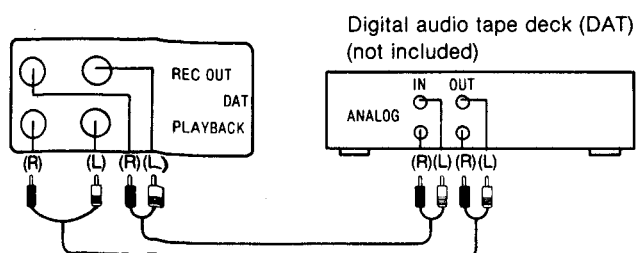
■ "GND" terminal

This terminal is for use with a turntable which has a ground wire.

※ Phono input capacitance is about 270pF for (EG) area. (about 100pF for other areas.)

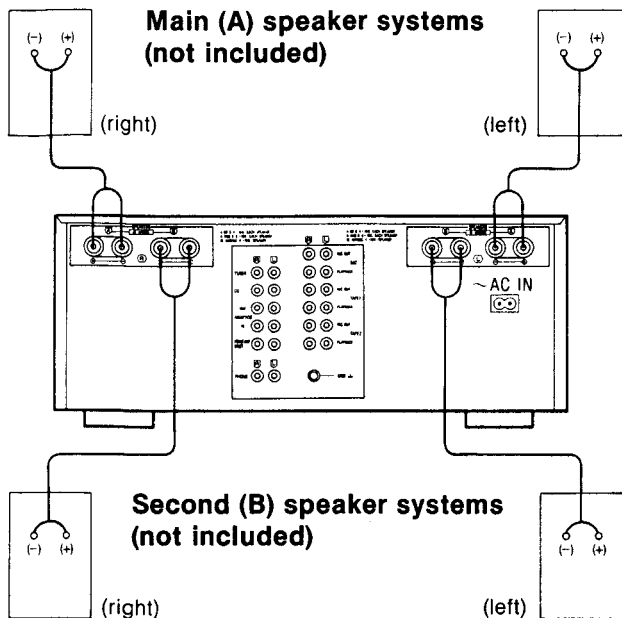
G "DAT" terminals

Connect a digital audio tape deck (DAT).

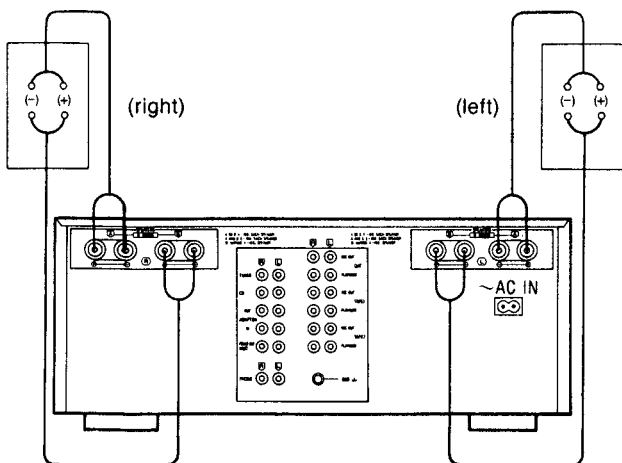


Connection to speaker systems

To connect main and/or second speaker systems



To connect bi-wired speaker systems



Note: Connect only bi-wired speaker systems in this way.

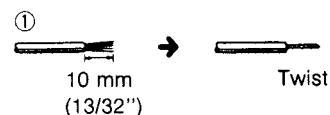
One pair of speaker systems can be connected to the "A" terminals of this unit and one pair to the "B" terminals, or only one pair of bi-wired speaker systems can be connected to all terminals.

■ Load impedance

- When only the "A" or only the "B" terminals are used: 4-16 ohms
- When both the "A" and the "B" terminals are used simultaneously: 8-16 ohms
- When bi-wired speaker systems are used: 4-16 ohms

■ To connect cords to terminals

- ① Strip off the outer covering, and twist the center conductor.



- ② Turn completely to the left.

②

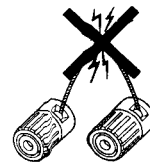
- ③ Insert the wire and turn completely to the right. Pull the wire to assure a proper connection.

③

Note: Be sure to only connect positive (+) cords to positive (+) terminals, and negative (-) cords to negative (-) terminals.

Note:

To prevent damage to circuitry, never short-circuit the plus (+) and minus (-) speaker cords.

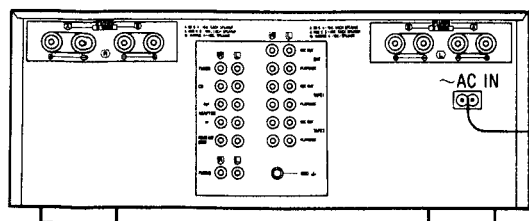


■ Bi-wiring

The treble range and the bass range of the speaker systems are connected to the speaker terminals of the amplifier by using two speaker connection wires separately for each.

As a result of making connections in this way, sound can be reproduced with much greater nuance and detail, with the feelings of air oscillation and deepness of sound provided by an input source that suppresses reciprocal band-range interference. (Refer to the operating instructions of the speaker system.)

To connect the AC power supply cord (included)

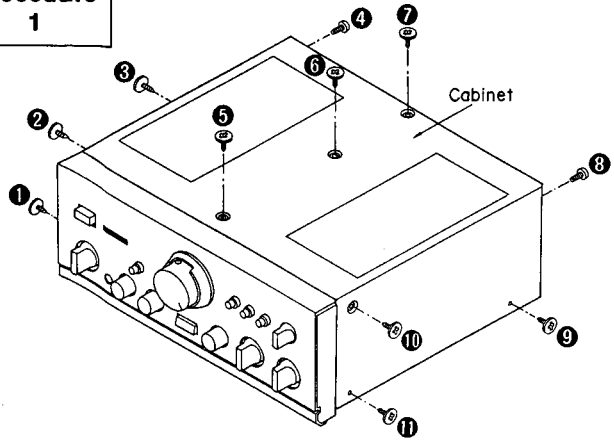
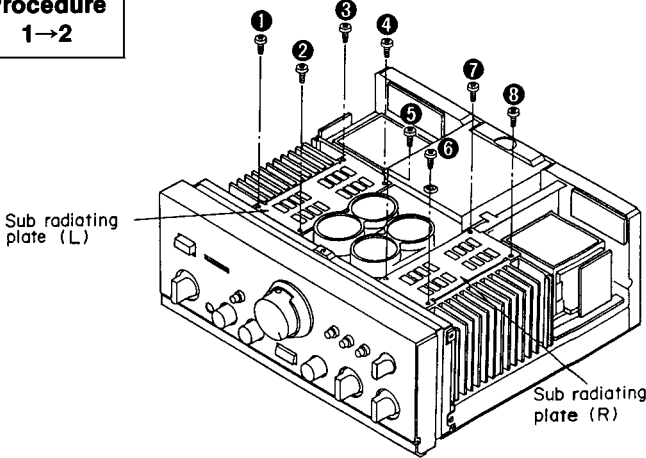
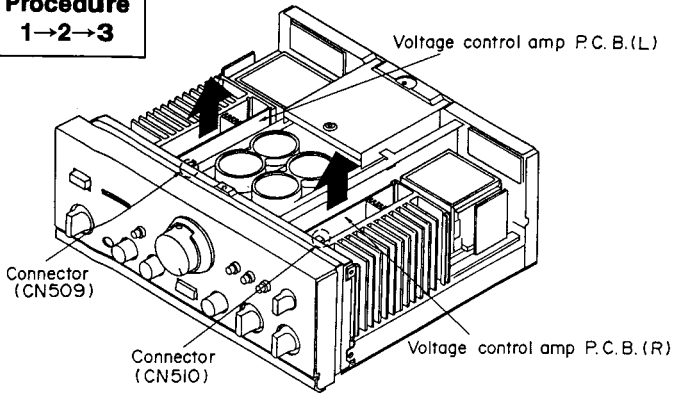
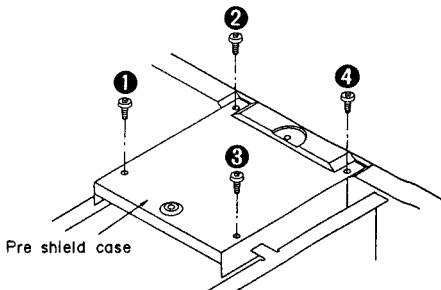
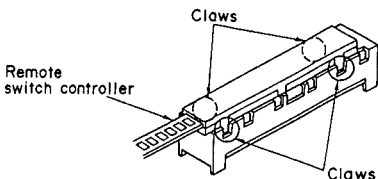
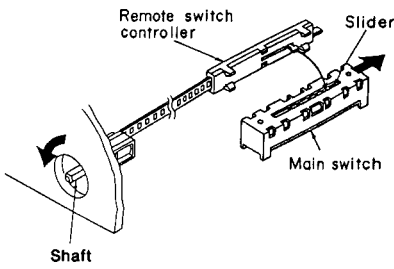


AC power supply cord (included)

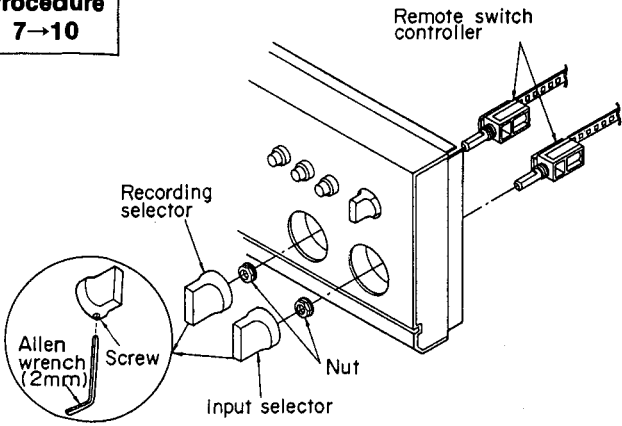
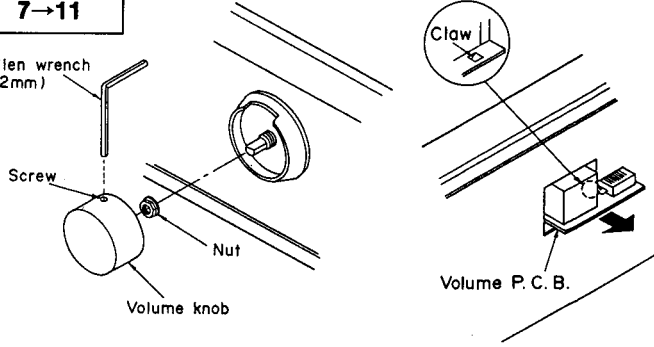
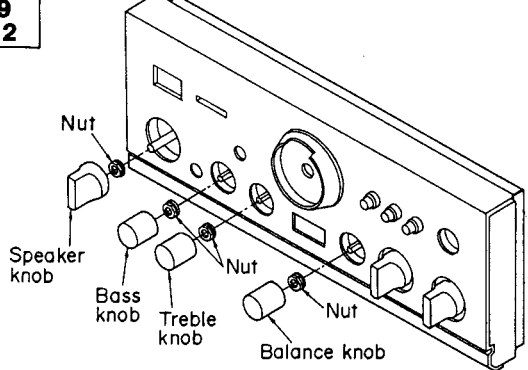
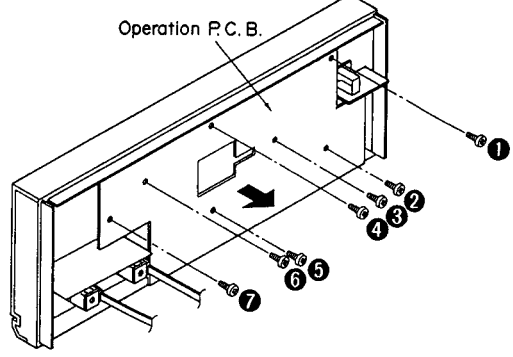
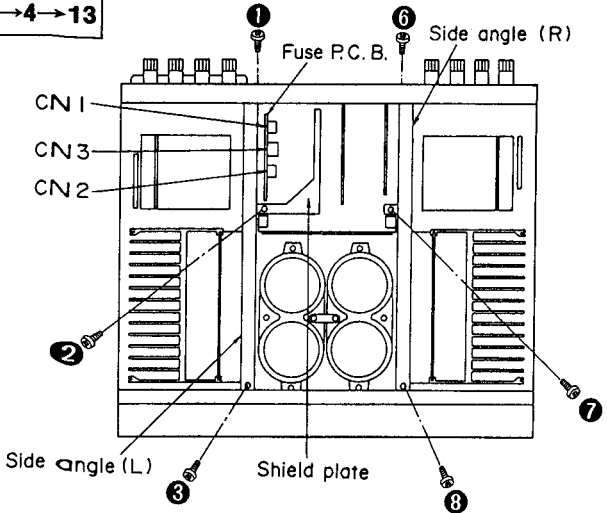
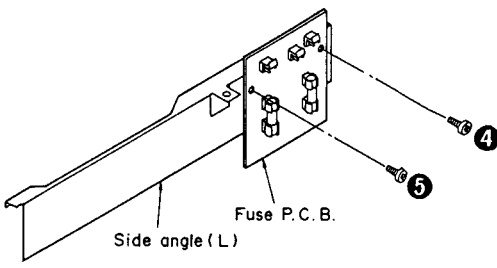
Household AC outlet

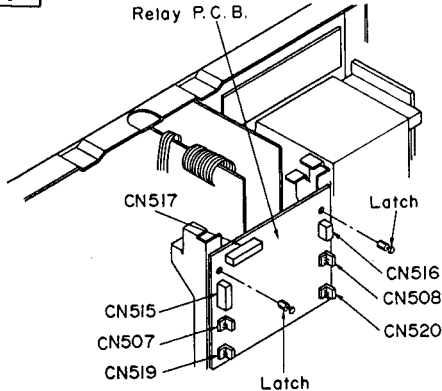
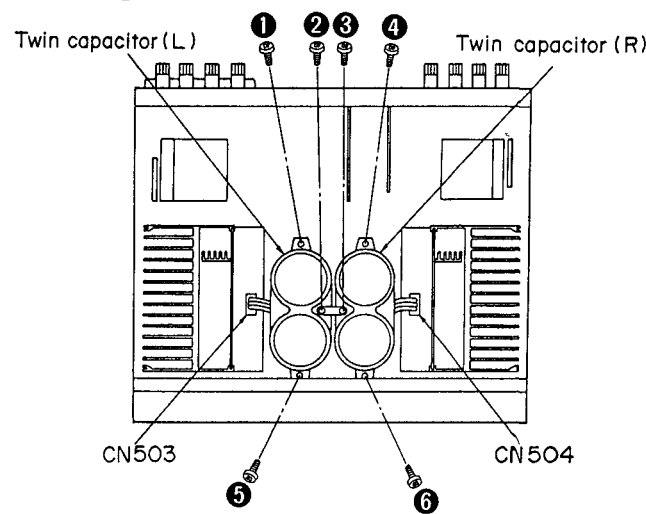
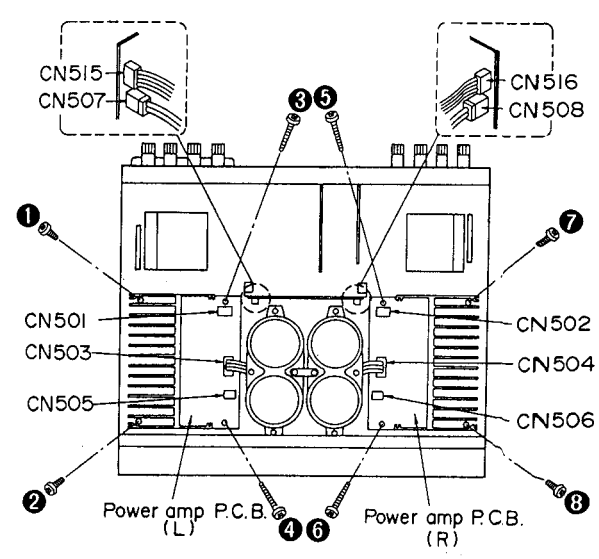
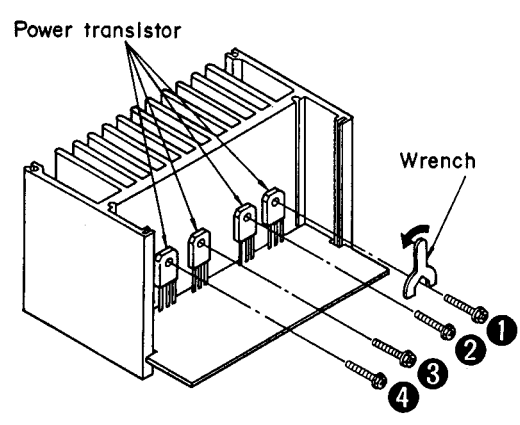
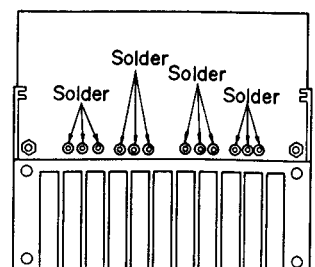
Fit a suitable plug to an AC power supply cord.

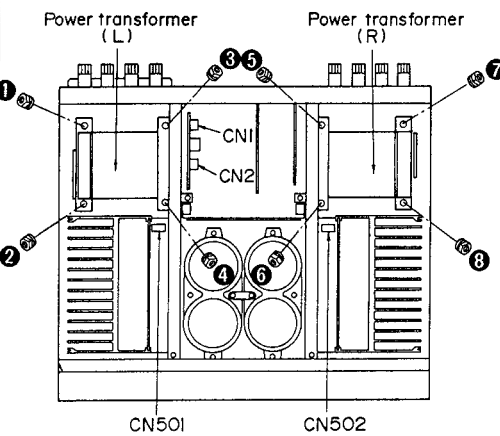
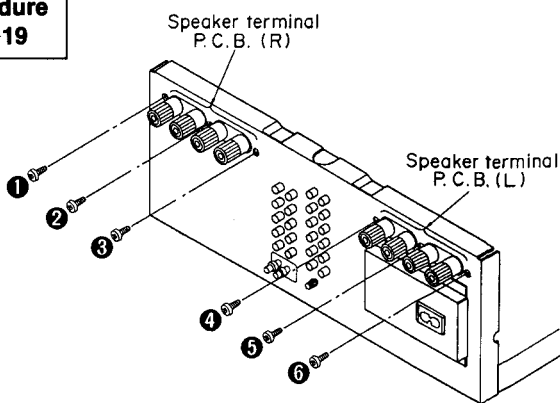
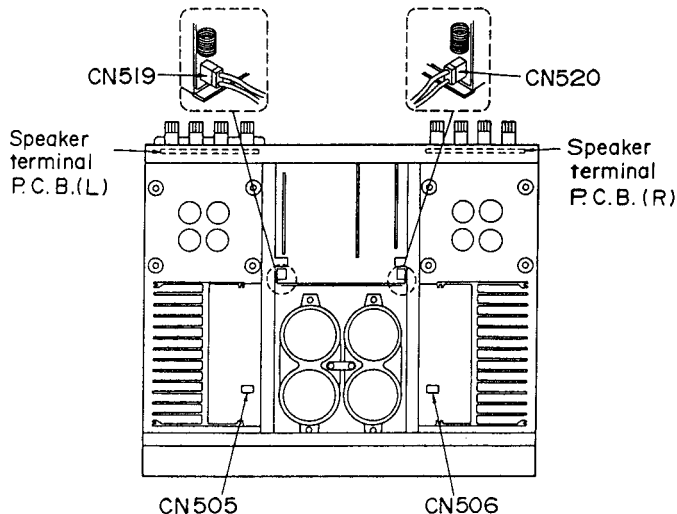
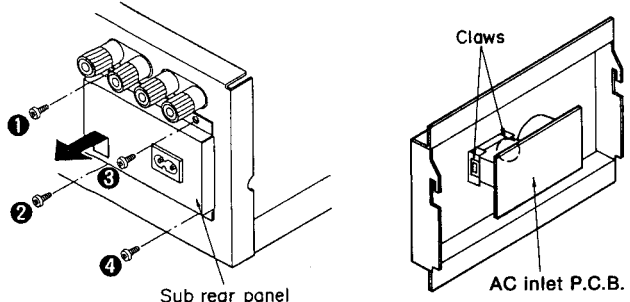
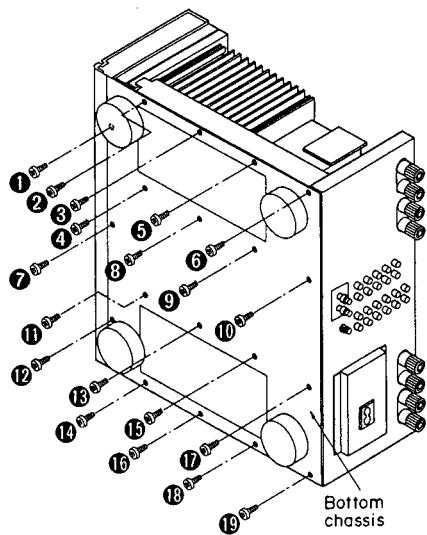
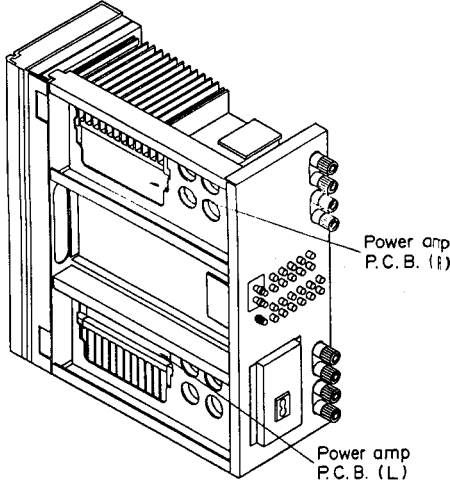
DISASSEMBLY INSTRUCTIONS

Ref. No. 1	Removal of the cabinet	Ref. No. 2	Removal of the sub radiating plate (L), (R)
Procedure 1	 • Remove the 11 screws (①～⑪).	Procedure 1→2	 • Remove the 8 screws (①～⑧).
Ref. No. 3	Removal of the Voltage control amp P.C.B. (L), (R)	Ref. No. 4	Removal of the pre-shield case
Procedure 1→2→3	 1. Remove the 2 connectors (CN509, CN510). 2. Pull out the P.C.B. (Lch, Rch) in the direction of the arrow. Note: Take care the connectors, and remove the P.C.B.	Procedure 1→4	 1. Remove the 4 screws (①～④). 2. Lift the shield case and remove it. ■ Removal of the remote switch controller • Release the 4 claws of remote switch controller by used ⊖ screwdriver.  ■ Installation of the remote switch controller 1. Turn the shaft to the end in the direction of the arrow. 2. Slide the slider of the main switch as far as it will go in the direction of the arrow, and then mount the remote switch controller. 
Ref. No. 5	Removal of the DAT/TAPE output terminal P.C.B.		
Procedure 1→4→5			

Ref. No. 6	Removal of the input/output terminal P.C.B.	1. Remove the 3 screws (①~③). 2. Remove the 3 connectors (CN103, CN203, CN204).	
Ref. No. 7 Procedure 1→2→3→4 →5→7	Removal of the front panel	1. Remove the 4 connectors (CN103, CN203, CN204, CN517). 2. Remove the 6 screws (①~⑥). 3. Release the 2 claws, and remove the front panel in the direction of the arrow. Note: Take care the connectors, and remove the front panel.	
Ref. No. 8	Removal of the Power switch P.C.B.	Ref. No. 9	Removal of the Phono selector switch P.C.B.
Procedure 7→8	1. Remove the power switch knob by pushing it from behind the front panel. 2. Remove the 2 screws (①, ②). 3. Release the 1 claw.	Procedure 7→9	1. Pull out the knob and remove the 1 nut. 2. Remove the 3 connectors (CN101, CN104, CN106), and remove the P.C.B. in the direction of the arrow.

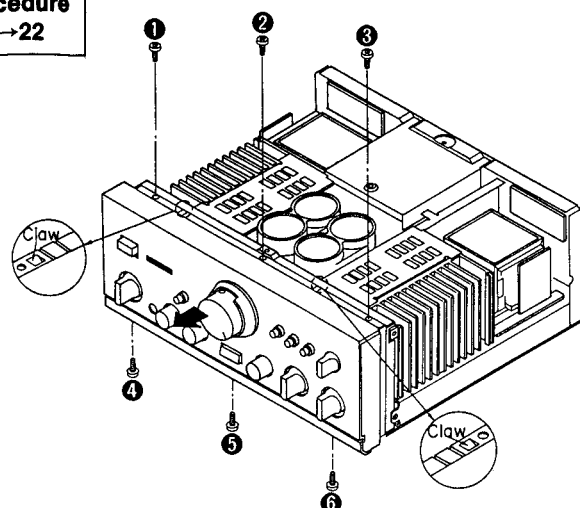
Ref. No. 10	Removal of the remote switch controller	Ref. No. 11	Removal of the volume knob
Procedure 7→10	 1. Loosen the screws set in the input selector and recording selector by using a allen wrench and remove the knob. 2. Remove the 2 nuts.	Procedure 7→11	 1. Loosen the screws set in the volume knob by using a allen wrench and remove the knob. 2. Remove the 1 nut. 3. Release the 1 claw, and remove the volume P.C.B. in the direction of the arrow.
Ref. No. 12	Removal of the operation P.C.B.		
Procedure 7→8→9→11→12	 1. Loosen the screws set in the speaker knob by using a allen wrench and remove the knob. 2. Pull out the bass knob, treble knob, balance knob.		 3. Remove the 4 nuts. 4. Remove the 7 screws (①~⑦). 5. Remove the operation P.C.B. in the direction of the arrow.
Ref. No. 13	Removal of the side angle (L), (R) and fuse P.C.B.		■ Removal of the side angle (L) and fuse P.C.B.
Procedure 1→2→4→13			1. Remove the 3 connectors (CN1, CN2, CN3). 2. Remove the 3 screws (①~③). 3. Remove the side angle (L) and fuse P.C.B. 4. Remove the 2 screws (④, ⑤), and remove the fuse P.C.B. ■ Removal of the side angle (R) 1. Remove the 3 screws (⑥~⑧). 

Ref. No. 14	Removal of the relay P.C.B.	Ref. No. 15	Removal of the twin capacitor (L), (R)
Procedure 1→2→4 →13→14		Procedure 1→2→4→13 →14→15	
	 1. Remove the 2 latches. 2. Remove the 7 connectors (CN507, CN508, CN515, CN516, CN517, CN519, CN520).		 1. Remove the 2 connectors (CN503, CN504). 2. Remove the 6 screws (①～⑥).
Ref. No. 16	Removal of the power amp P.C.B. (L), (R)		 1. Remove the 4 screws (①～④). 2. Remove the 5 connectors (CN501, CN503, CN505, CN507, CN515). 1. Remove the 4 screws (⑤～⑧). 2. Remove the 5 connectors (CN502, CN504, CN506, CN508, CN516).
Ref. No. 17	Removal of the power transistor		1. Unsolder the power transistor. 2. Remove the 4 screws (①～④). [This figure show the left (Lch) power transistor. Remove the right (Rch) power transistor in the same way.] • When mounting the power IC or regulator transistor. Apply silicone compound (SZZ0L15) to the rear side of power IC or regulator transistor.  
Procedure 16→17			

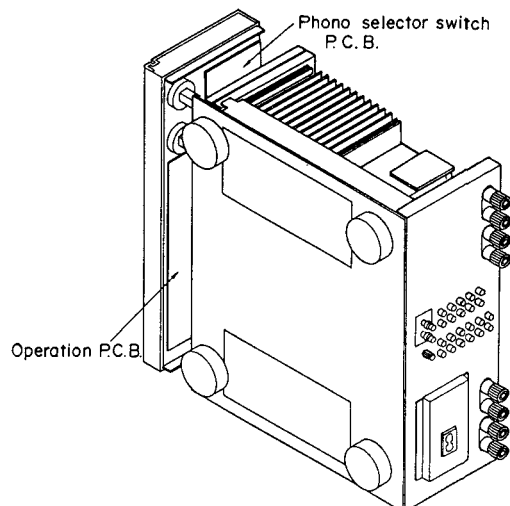
Ref. No. 18	Removal of the Power transformer (L), (R)	Ref. No. 19	Removal of the speaker terminal P.C.B. (L), (R)
Procedure 1→2→3 →4→18	 1. Remove the 8 nuts (①～⑧). 2. Remove the 4 connectors (CN1, CN2, CN501, CN502).	Procedure 18→19  1. Remove the 6 screws (①～⑥).	 2. Remove the 4 connector (CN505, CN506, CN519, CN520).
Ref. No. 20	Removal of the AC inlet P.C.B.		
Procedure 1→20	1. Remove the 4 screws (①～④), and remove the sub rear panel in the direction of the arrow.  2. Push the 2 claws of AC inlet P.C.B. in the direction of the arrow, and remove it.		
Ref. No. 21	How to check the power amp P.C.B.		
Procedure 1→21		1. Remove the 19 screws (①～⑲), and remove the bottom chassis.  2. When checking the soldered surface of P.C.B. and replacing the parts, do as shown.	

Ref. No.
22

How to check the operation P.C.B. and Phono selector switch P.C.B.

Procedure
1→22


1. Remove the 6 screws (1~6).
2. Release the 2 claws and pull out the front panel in the direction of the arrow.



3. When checking the soldered surface of P.C.B. and replacing the parts, do as shown.

Note: Take care the connectors, and pull out the front panel.

Ref. No.
23

How to check the voltage control

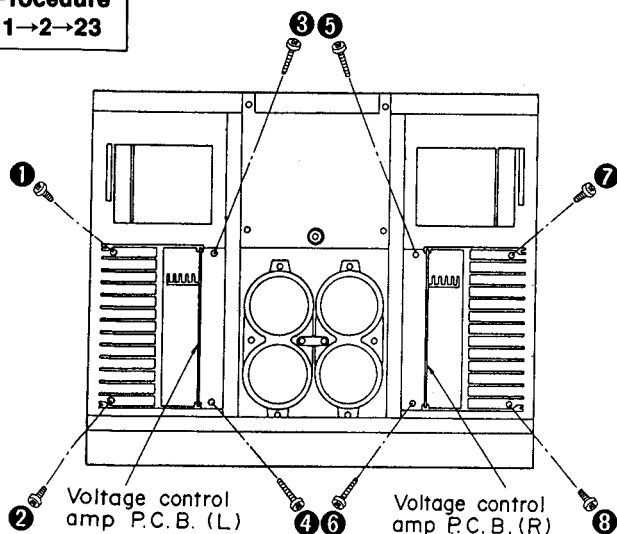
Procedure
1→2→23


Fig. 1

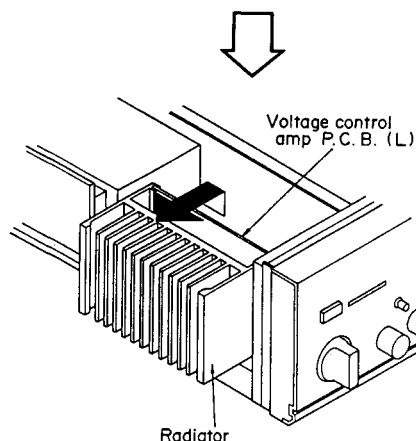


Fig. 2

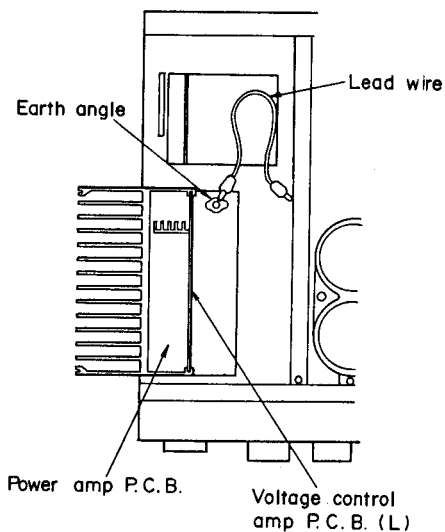


Fig. 3

1. Remove the 8 screws (1~8).
2. Pull out the radiator and voltage control amp P.C.B. in the direction of the arrow.

Note:

- Take care the connectors.
- Connect the ground terminal of power amp P.C.B. and chassis by lead wire. Figure 2 and figure 3 show the left (Lch) voltage control amp P.C.B. Remove the right (Rch) voltage control amp P.C.B. in the same way.

Ref. No. 24	Removal of the phono input terminal P.C.B.
Procedure 1→21→24	

- Release the 2 phone terminal covers.
- Remove the 2 screws (①, ②).

Ref. No. 25	About the wire processing
Procedure 1→2→4→25	

•When processing the wire after the repair finish, do as shown.

- Insert the wires of twin capacitors into the clamber.
- The release (INPUT/REC switch) should be routed to the inside of the CN504 lead wires. Also, do not clamp the release.
- Arrange the various lead wires so that they are not touching the rectifier diode.

Note:
Be especially careful not to bend or forcefully pull the bottom of the release (INPUT/REC switch); doing so could cause a malfunction.

Pull straight out
Do not bend the bottom of the release
(NG)

MEASUREMENTS AND ADJUSTMENTS

Control positions and equipment used.

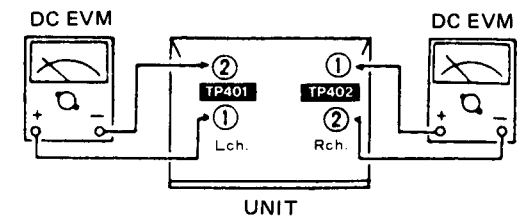
- Volume knob ∞ (Minimum)
- Speaker selector off

•AC and DC electronic voltmeter (EVM)

(1) VOLTAGE CONTROL (V) AMP. IDLING (ICQ) ADJUSTMENT

- Test equipment connection is shown in figure. (Connect the DC EVM on both channels.)
- Completely turn the (V) amp. adjusting volumes (VR401, VR402) counter-clockwise.
- Turn ON the set when it is cold, and about 5 ~ 7 sec. later, adjust VR401 and VR402 so that the voltage is 25mV.

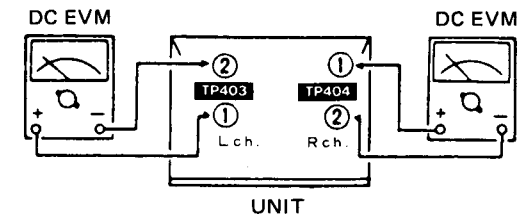
Also, check that the voltage is 25 ~ 30mV (standard: 27mV) after lapse of 10 ~ 15 minutes. (Below 50mV after lapse of 20min.).



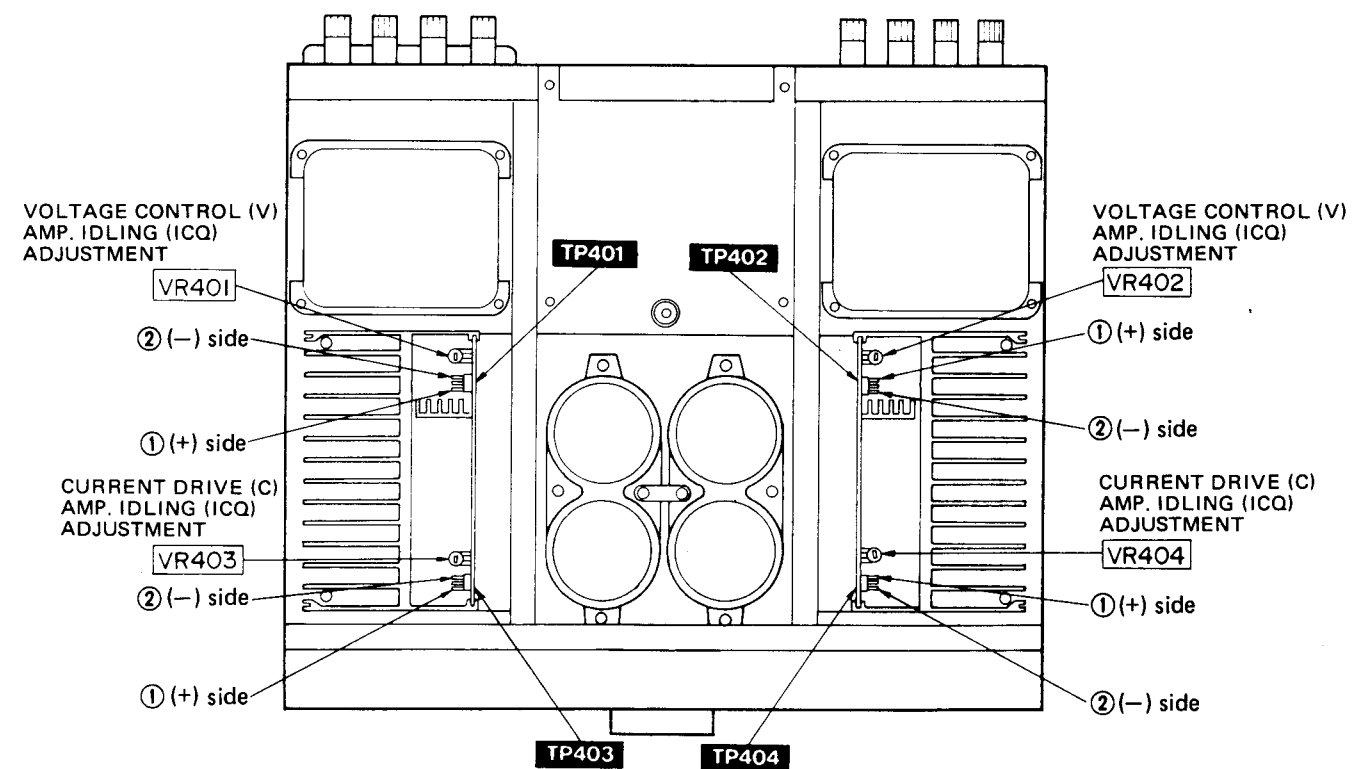
(2) CURRENT DRIVE (C) AMP. IDLING (ICQ) ADJUSTMENT

- Test equipment connection is shown in figure. (Connect the DC EVM on both channels.)
- Completely turn the (C) amp. adjusting volumes (VR403, VR404) counter-clockwise.
- Turn ON the set when it is cold, and the "VOLTAGE CONTROL (V) AMP. IDLING (ICQ) ADJUSTMENT" later, adjust VR403 and VR404 so that the voltage is 3mV.

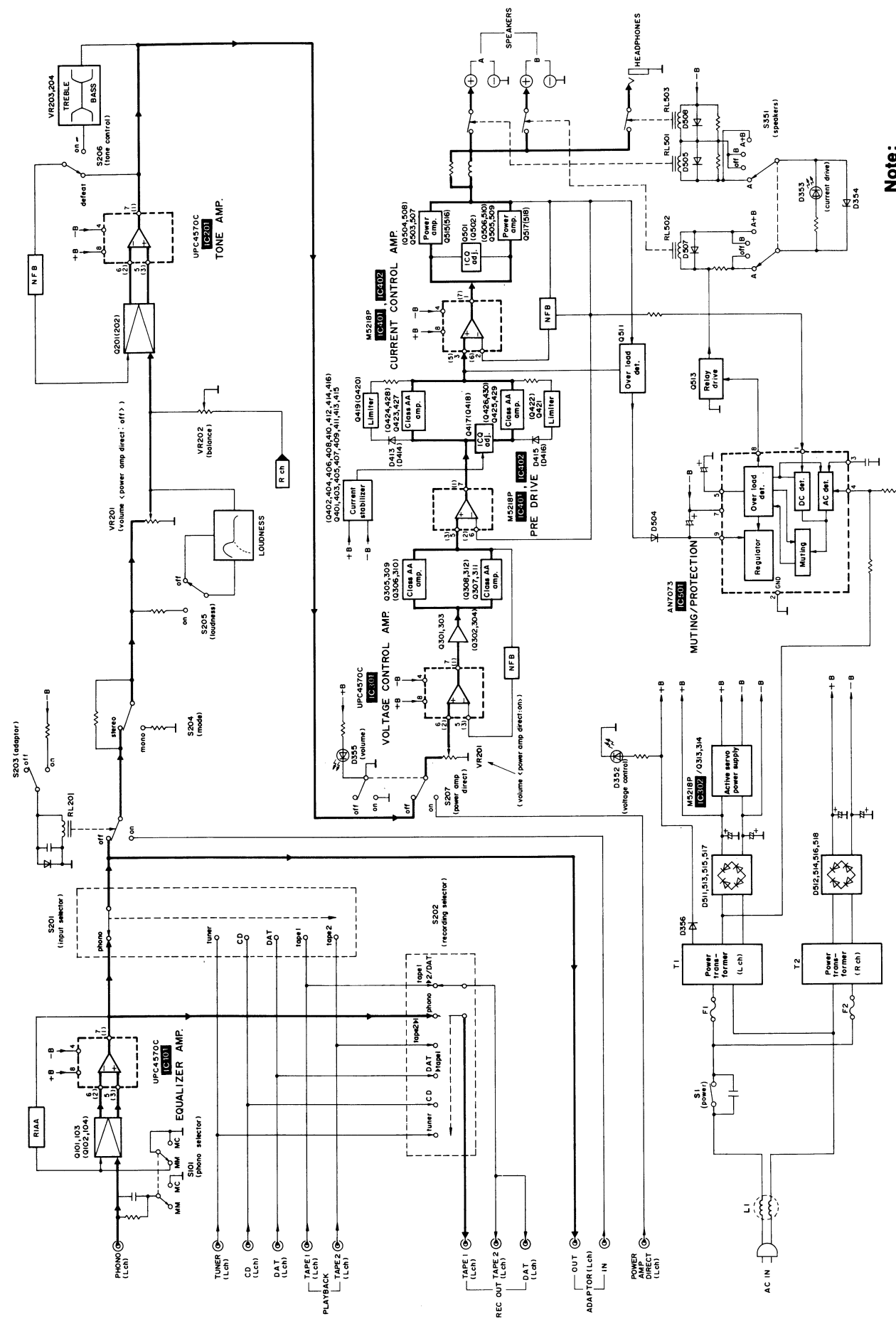
Also, check that the voltage is 4 ~ 7mV (standard: 5mV) after lapse of 10 ~ 15 minutes. (Below 15mV after lapse of 20 min.).



• Adjustment points



BLOCK DIAGRAM



SCHEMATIC DIAGRAM (Parts list on pages 32~35.)

(This schematic diagram may be modified at any time with development of new technology.)

Notes:

- **S1** : Power switch in "on" position.
- **S101** : Phono cartridge selector (phono selector) switch.
- **S201** : Input selector (input selector) switch.
- **S202** : Recording output selector (recording selector) switch.
- **S203** : Adaptor (adaptor) switch.
- **S204** : Mode selector (mode) switch.
- **S205** : Loudness (loudness) switch.
- **S206** : Tone control (tone control) switch.
- **S207** : Power amplifier direct (power amp direct) switch.
- **S351** : Speaker selector (speakers) switch.

• The voltage value and waveforms are the reference voltage of this unit measured by DC electronic voltmeter (high impedance) and oscilloscope on the basis of chassis.

Accordingly, there may arise some error in voltage values and waveforms depending upon the internal impedance of the tester or the measuring unit.

Important safety notice:

Components identified by Δ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.

• — / — : Positive voltage lines and negative voltage lines.

• — : PHONO signal lines (Lch).

• — : Recording signal lines.

Caution!

IC and LSI are sensitive to static electricity. Secondary trouble can be prevented by taking care during repair.

• Cover the parts boxes made of plastics with aluminum foil.

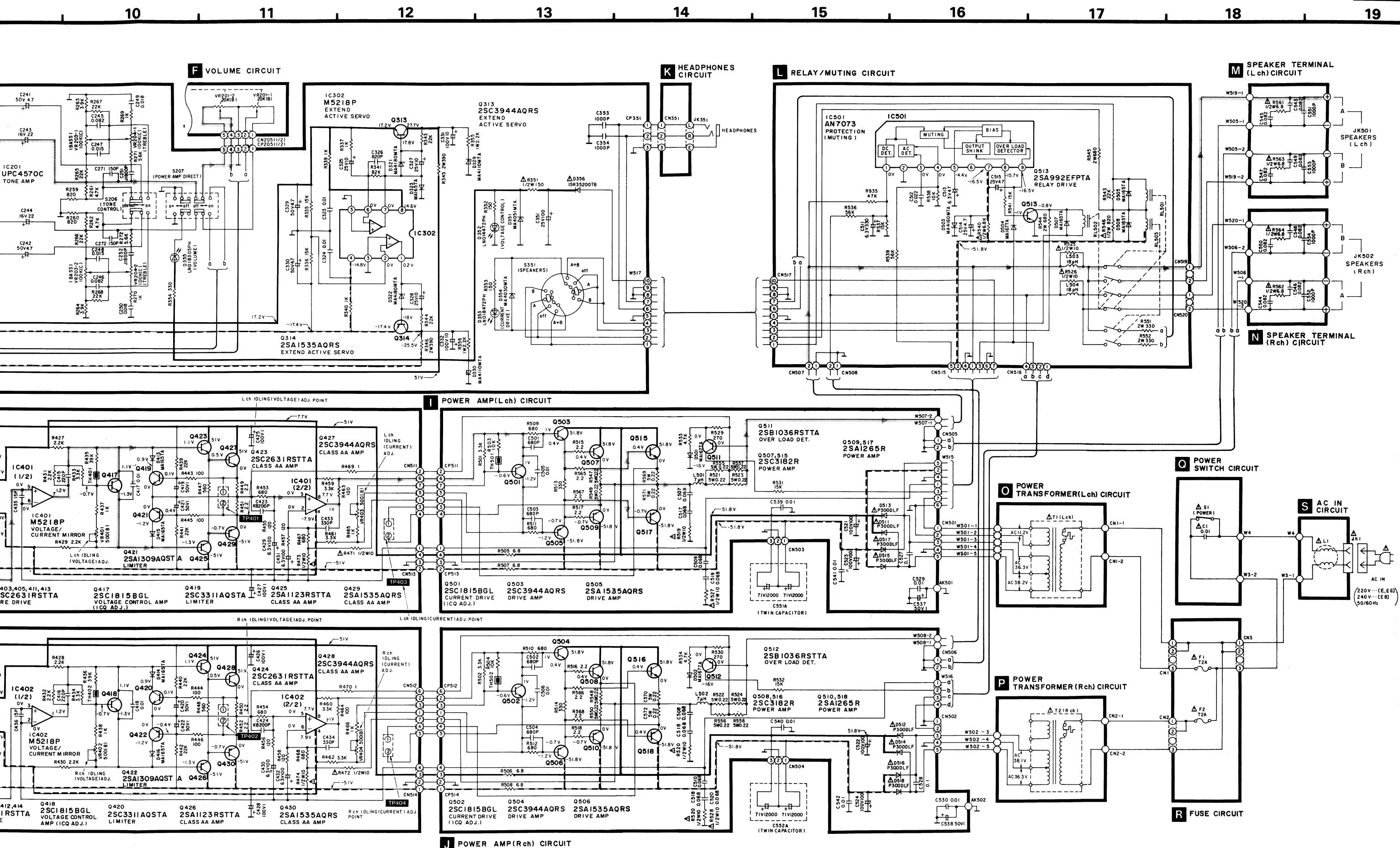
• Ground the soldering iron.

• Put a conductive mat on the work table.

• Do not touch the pins of IC or LSI with fingers directly.

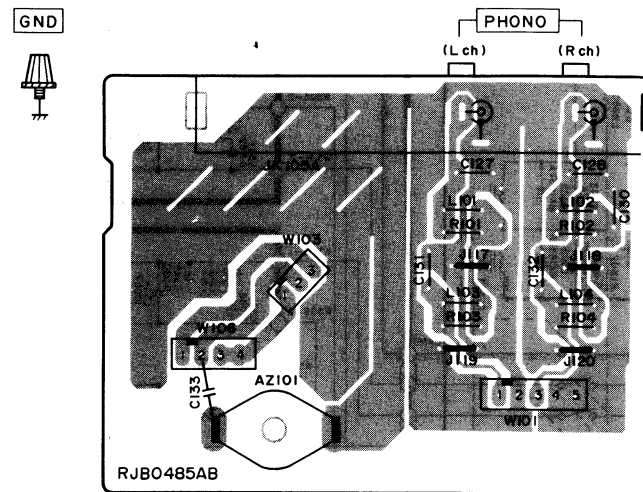
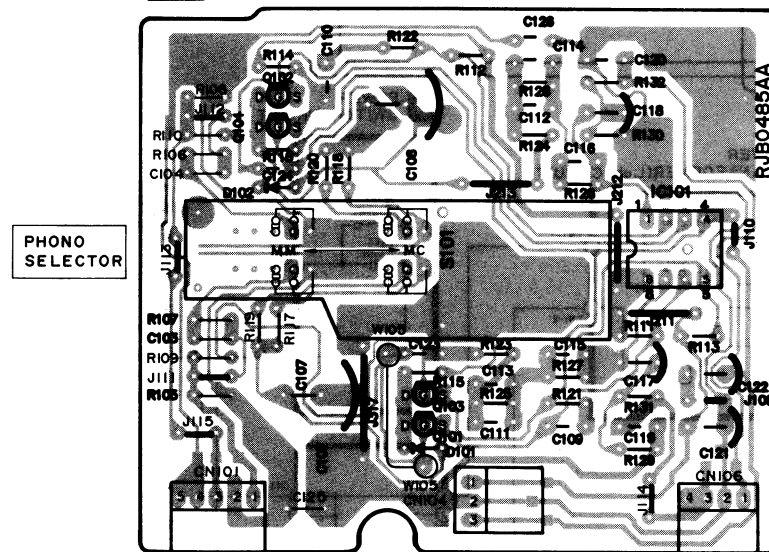
TERMINAL GUIDE OF IC'S, TRANSISTORS AND DIODES

 M5218P UPC4570C 8 Pin	 AN7073 9 Pin	 2SK369GR Drain Gate Source	 2SK389BG 1 D1 4 N.C. 7 D2 2 G1 5 S2 3 S1 6 G2
 2SA992EFPTA 2SA1123RSTTA 2SB1036RSTTA 2SC2631RSTTA 2SC1815BGL	 2SA1535AQRS 2SC3944AQRS	 2SA1309AQSTA 2SC3311AQSTA	 LN018305PH Anode Cathode A — Ca
 P300DLF 1SR35200TB MA165TA MA167TA MA29WATA	 MA4082MTA MA4160MTA MA4030MTA MA4051MTA MA4180MTA	 LN014472PH LN018472PH Cathode Anode A — Ca	

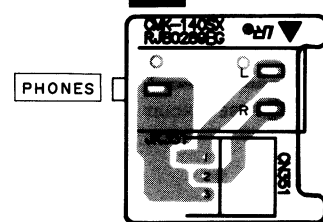


■ PRINTED CIRCUIT BOARDS

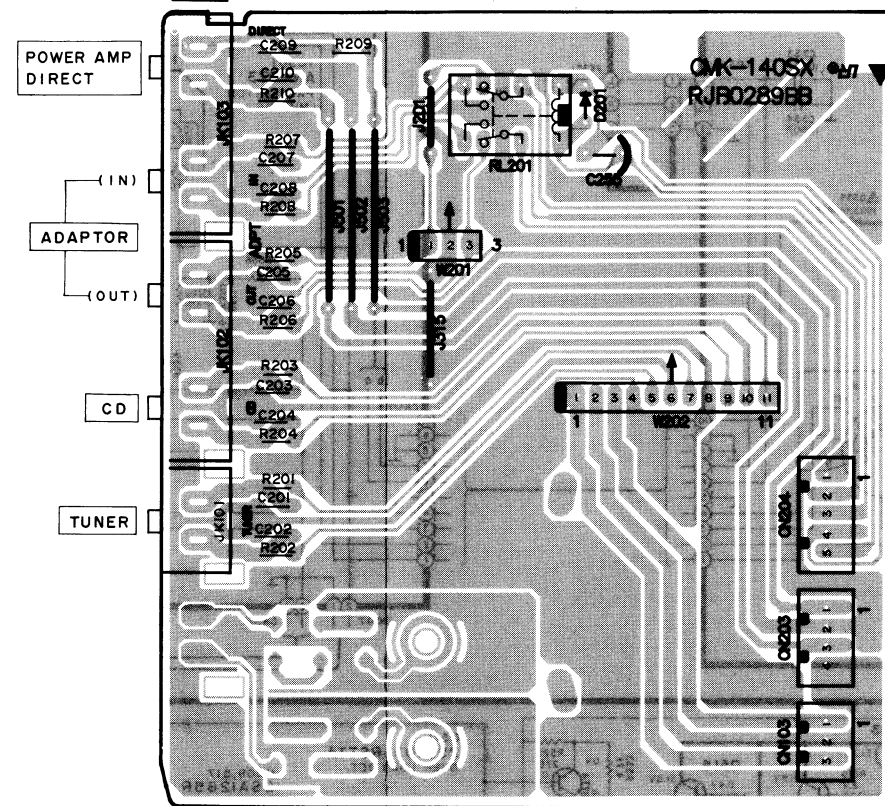
A PHONO TERMINAL P.C.B.

**B** PHONO SELECTOR / PHONO EQ AMP P.C.B.

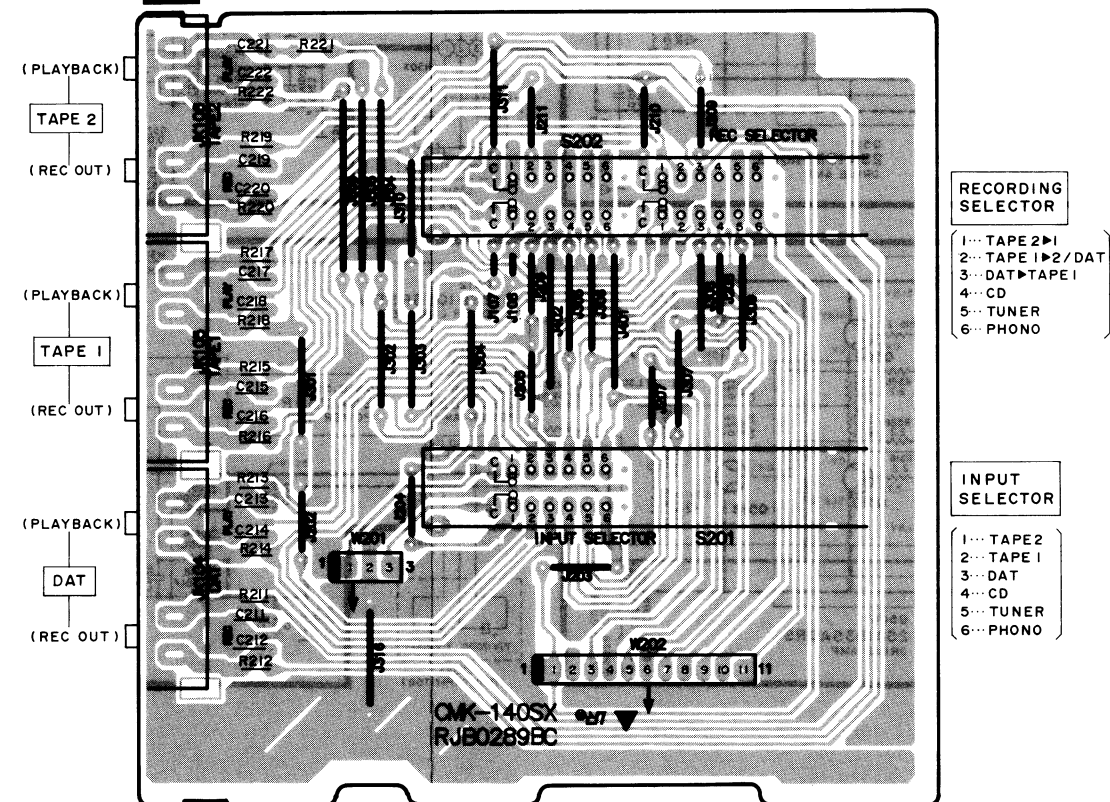
K HEADPHONES
P.C.B.



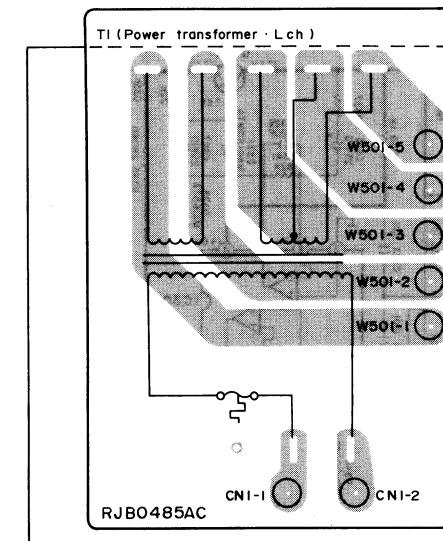
C INPUT/OUTPUT TERMINAL P.C.B.



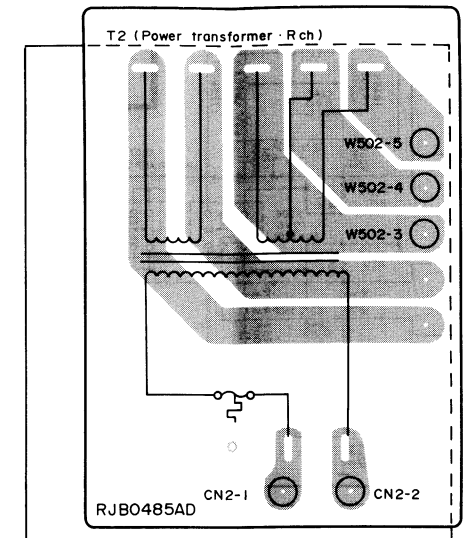
D DAT/TAPE I.2 INPUT/OUTPUT TERMINAL P.C.B.



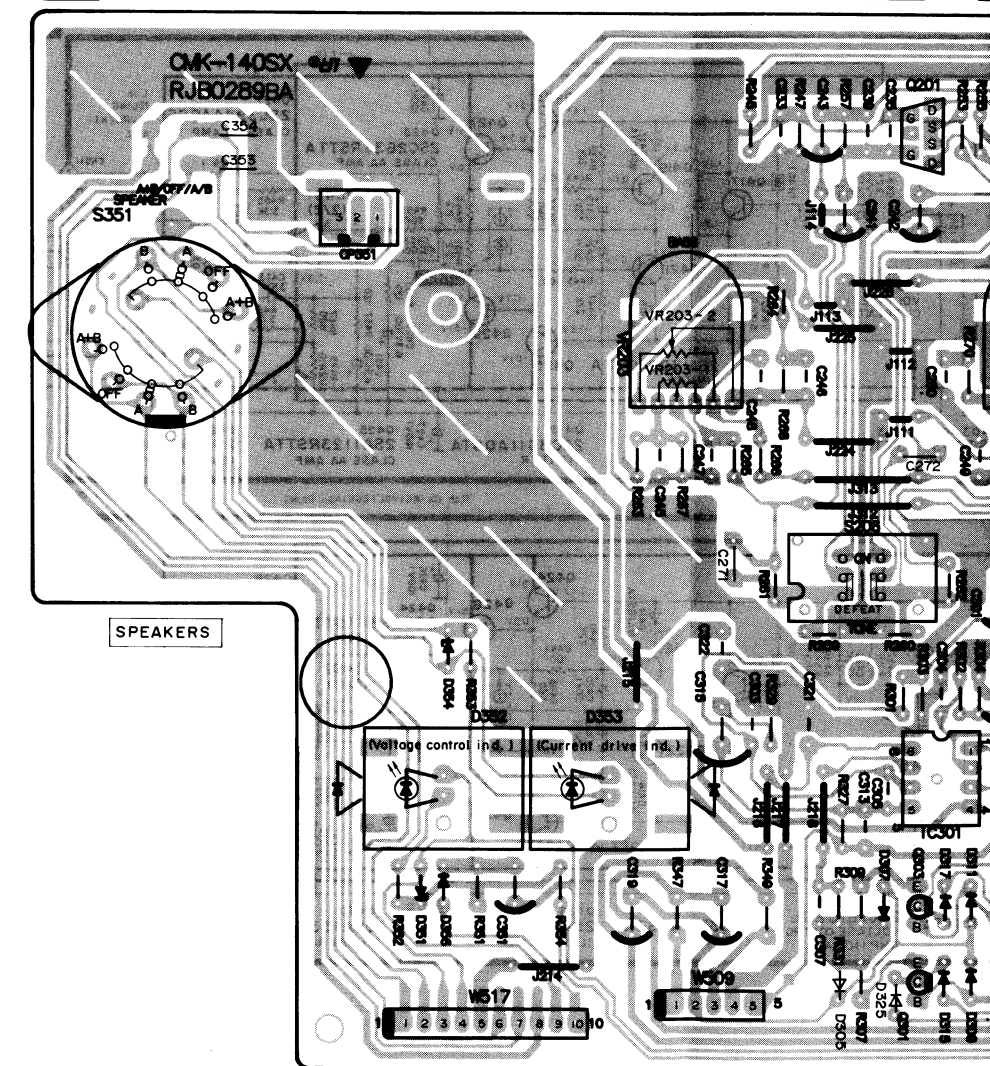
O POWER TRANSFORMER (L ch) P.C.B.



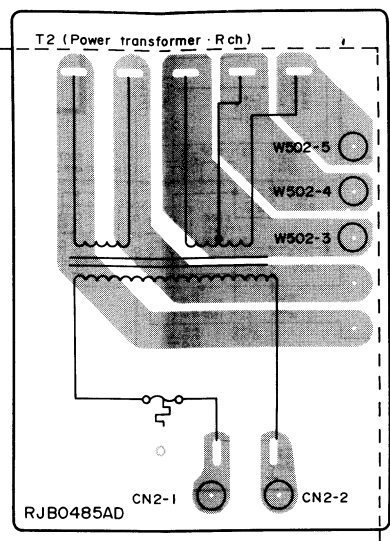
P POWER
TRANSFORMER (Rch) P.C.B.



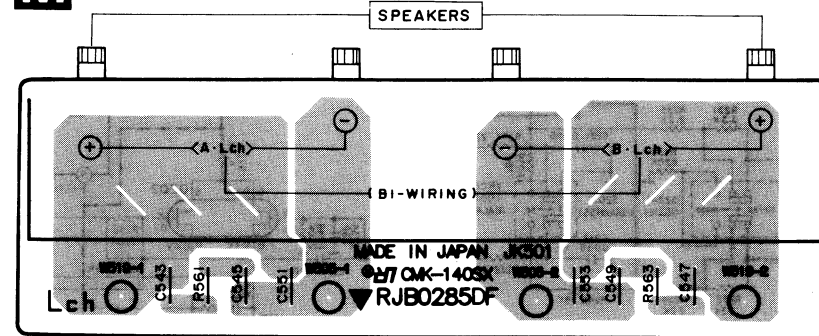
F OPERATION P.C.B.



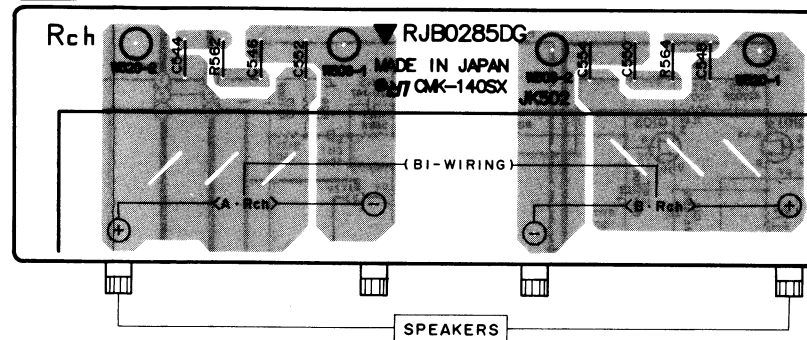
P POWER TRANSFORMER (Rch) P.C.B.



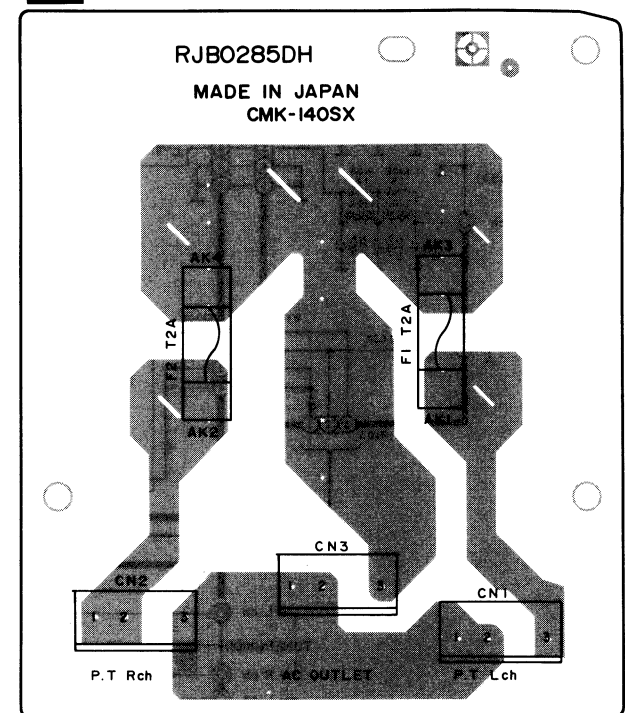
M SPEAKER TERMINAL (Lch) P.C.B.



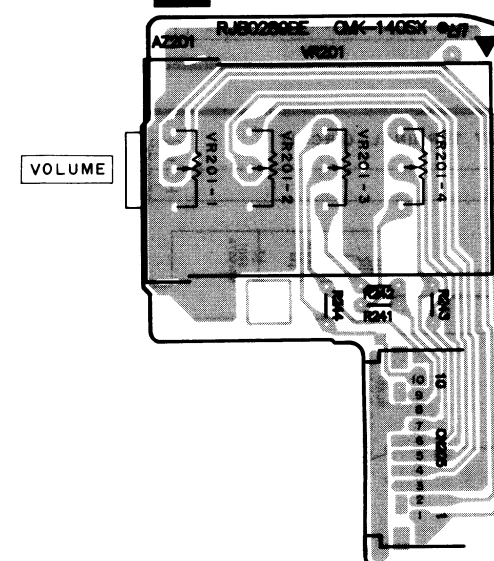
N SPEAKER TERMINAL (Rch) P.C.B.



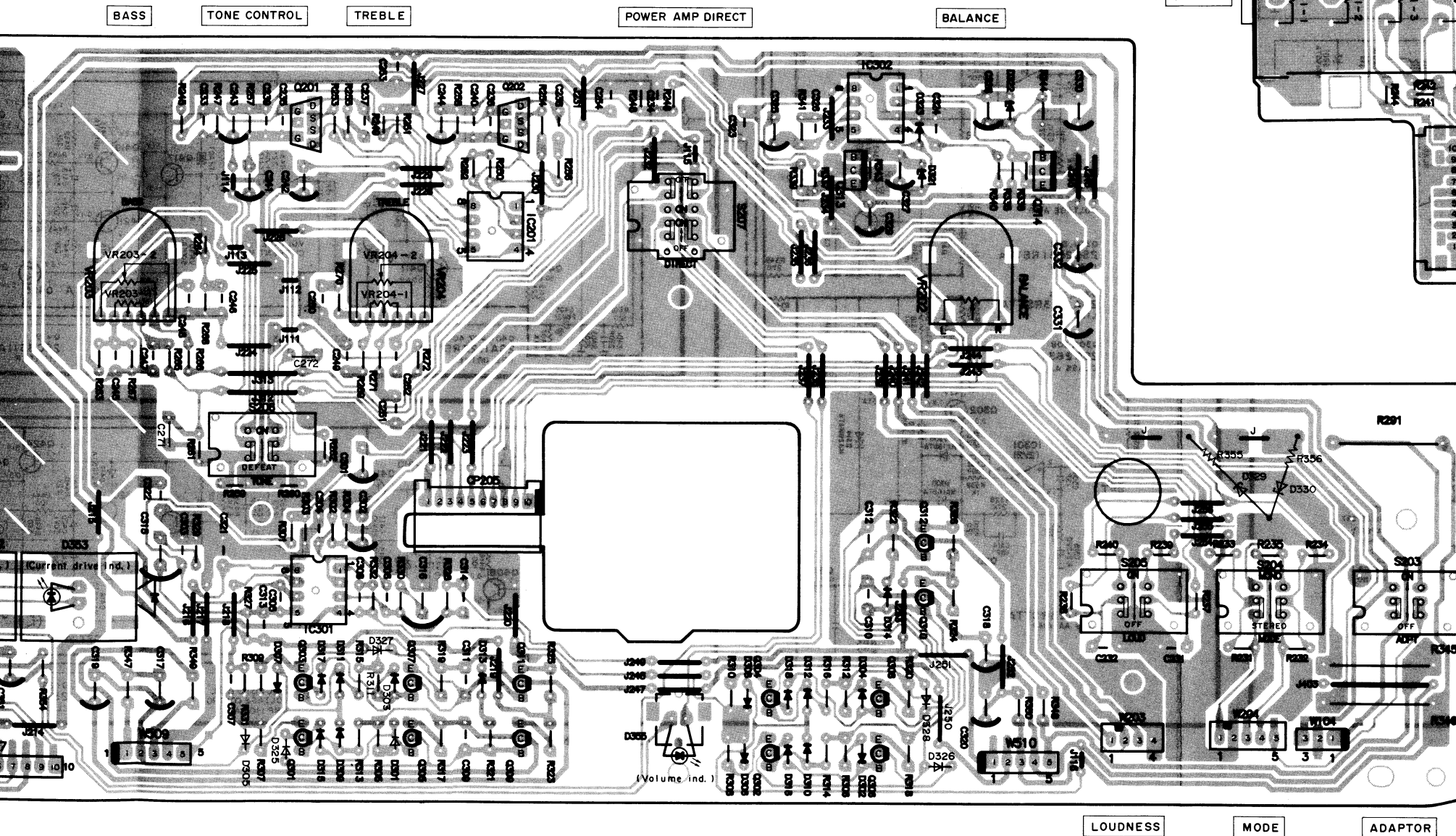
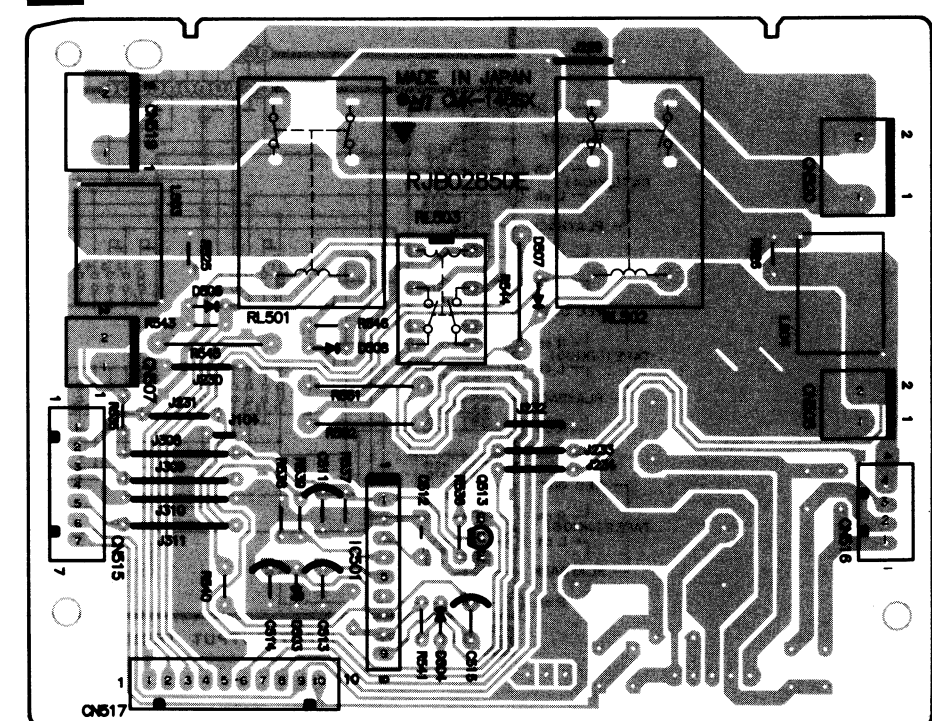
R FUSE P.C.B.



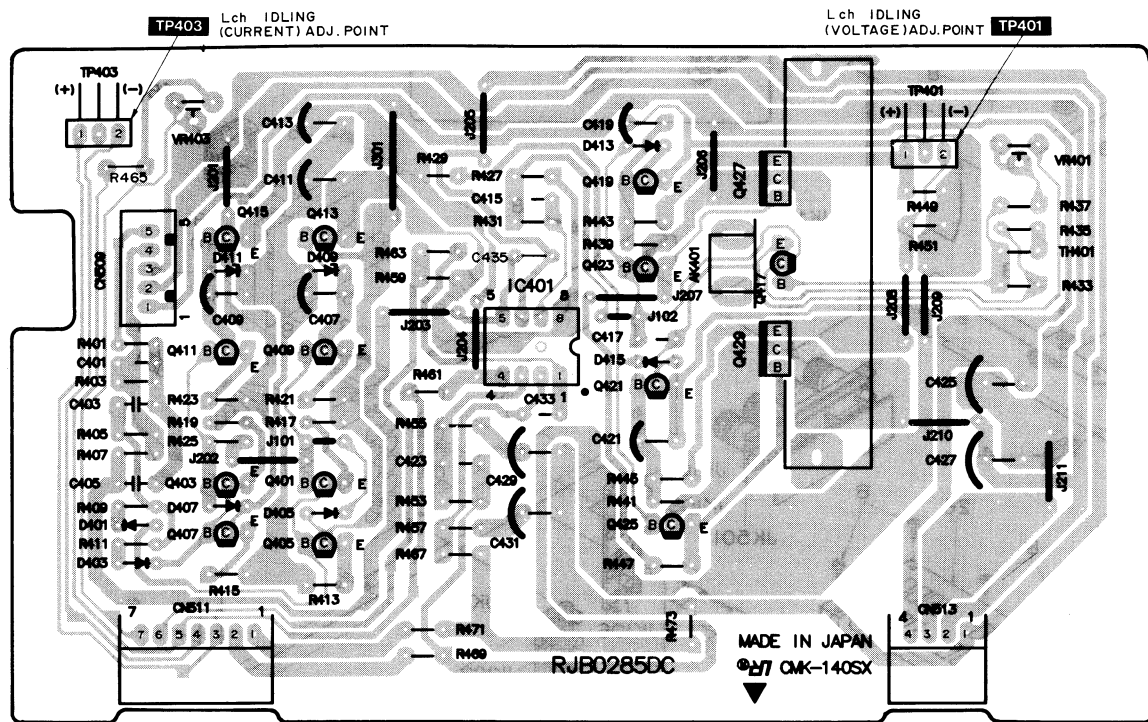
F VOLUME P.C.B.



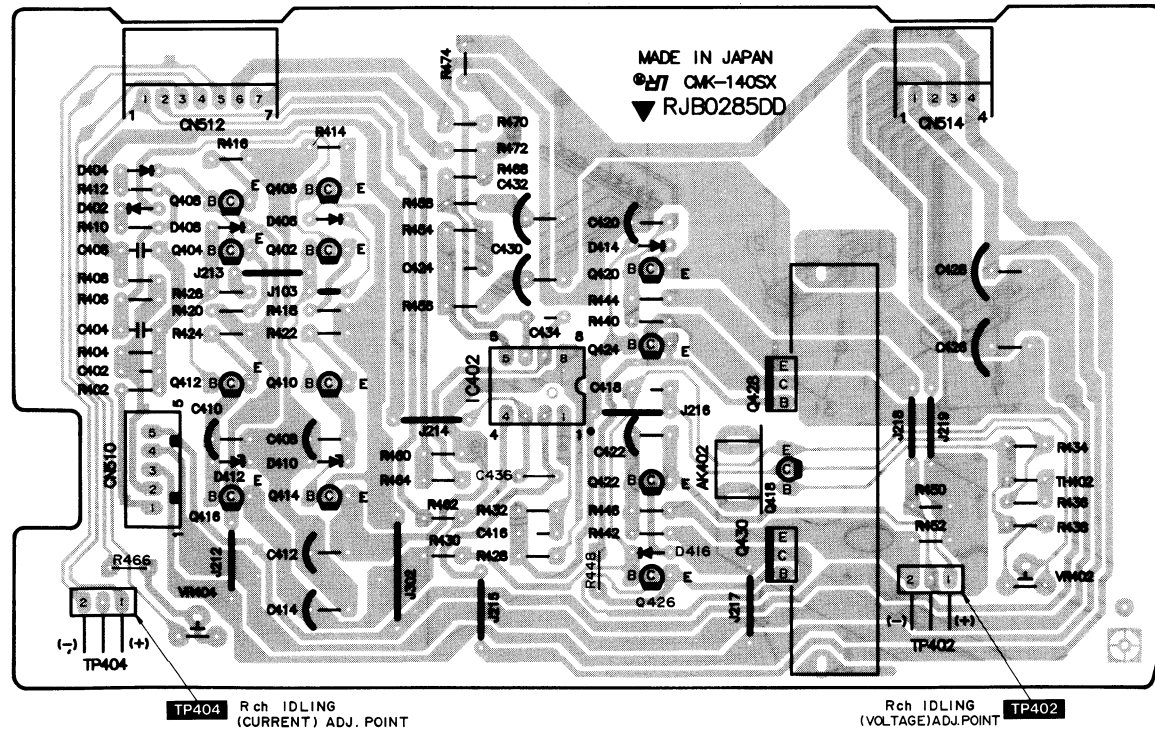
L RELAY/MUTING P.C.B.



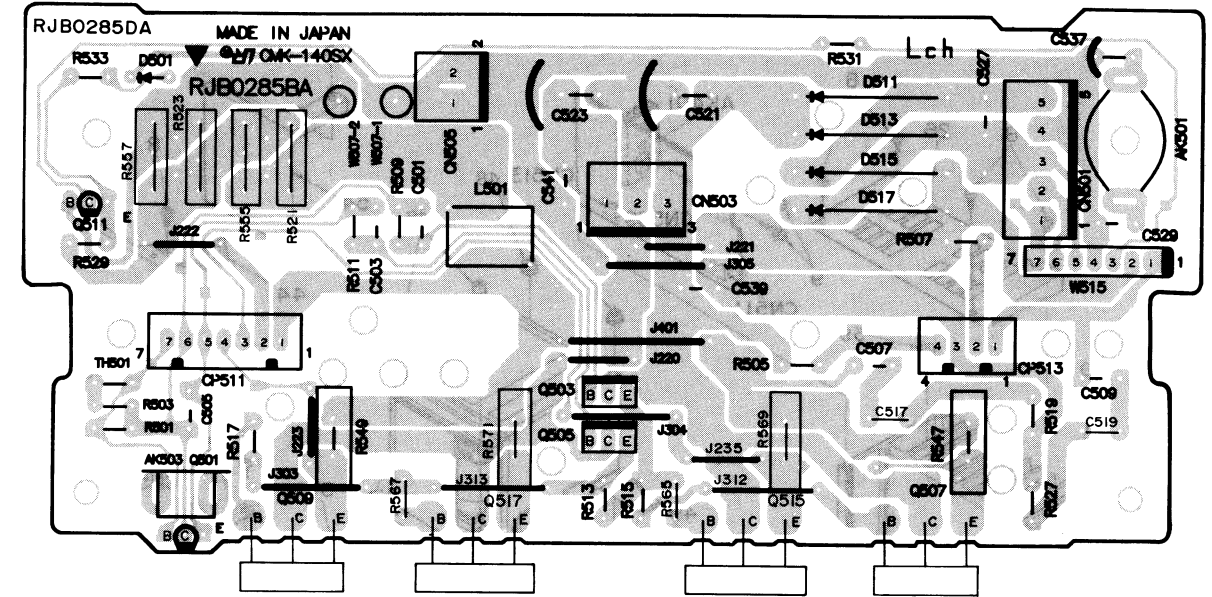
G VOLTAGE CONTROL AMP (Lch) P.C.B.



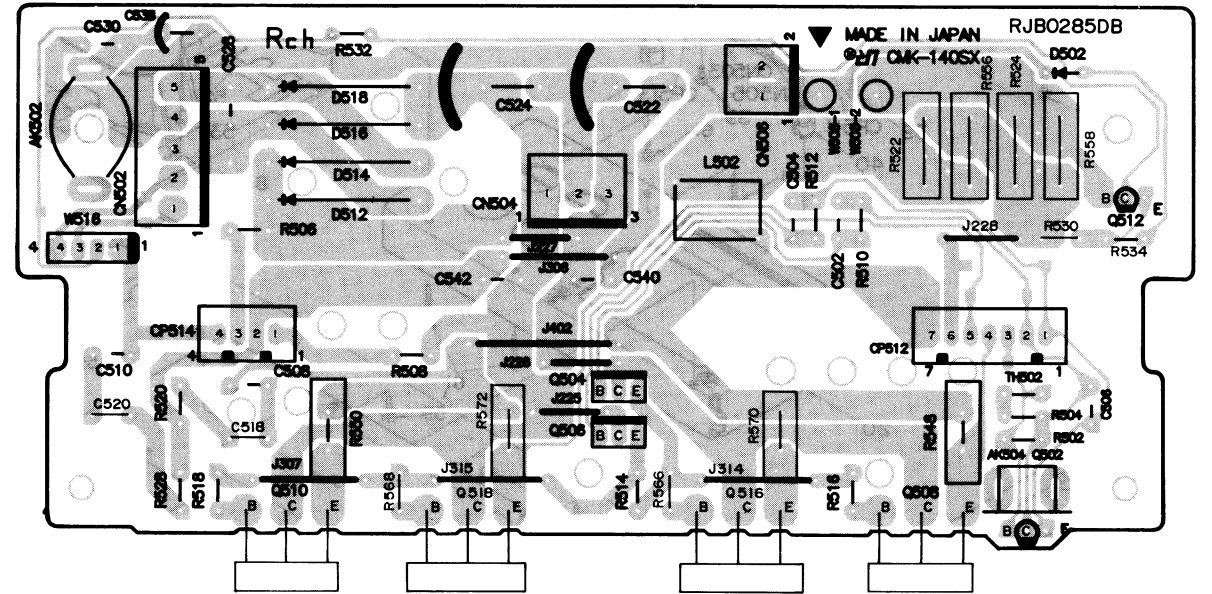
H VOLTAGE CONTROL AMP (Rch) P.C.B.



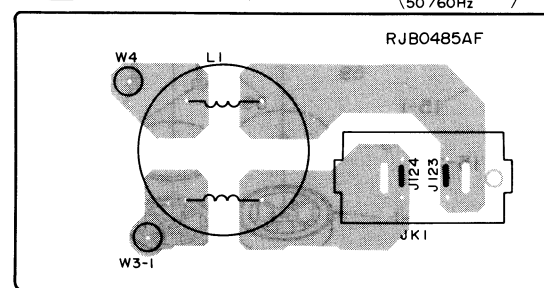
I POWER AMP (Lch) P.C.B.



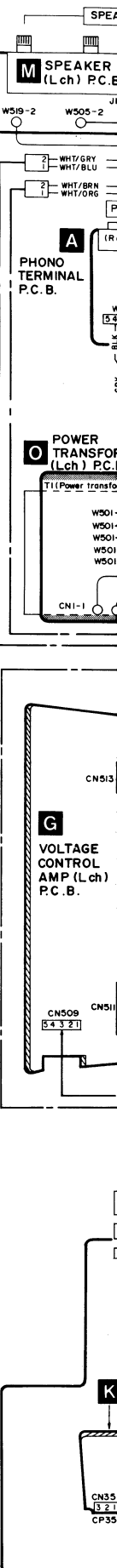
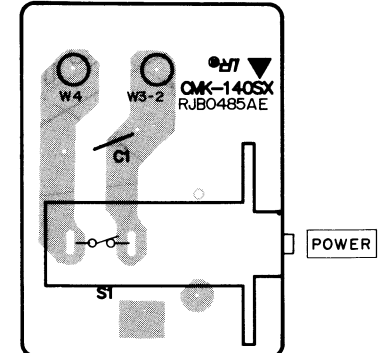
J POWER AMP (Rch) P.C.B.

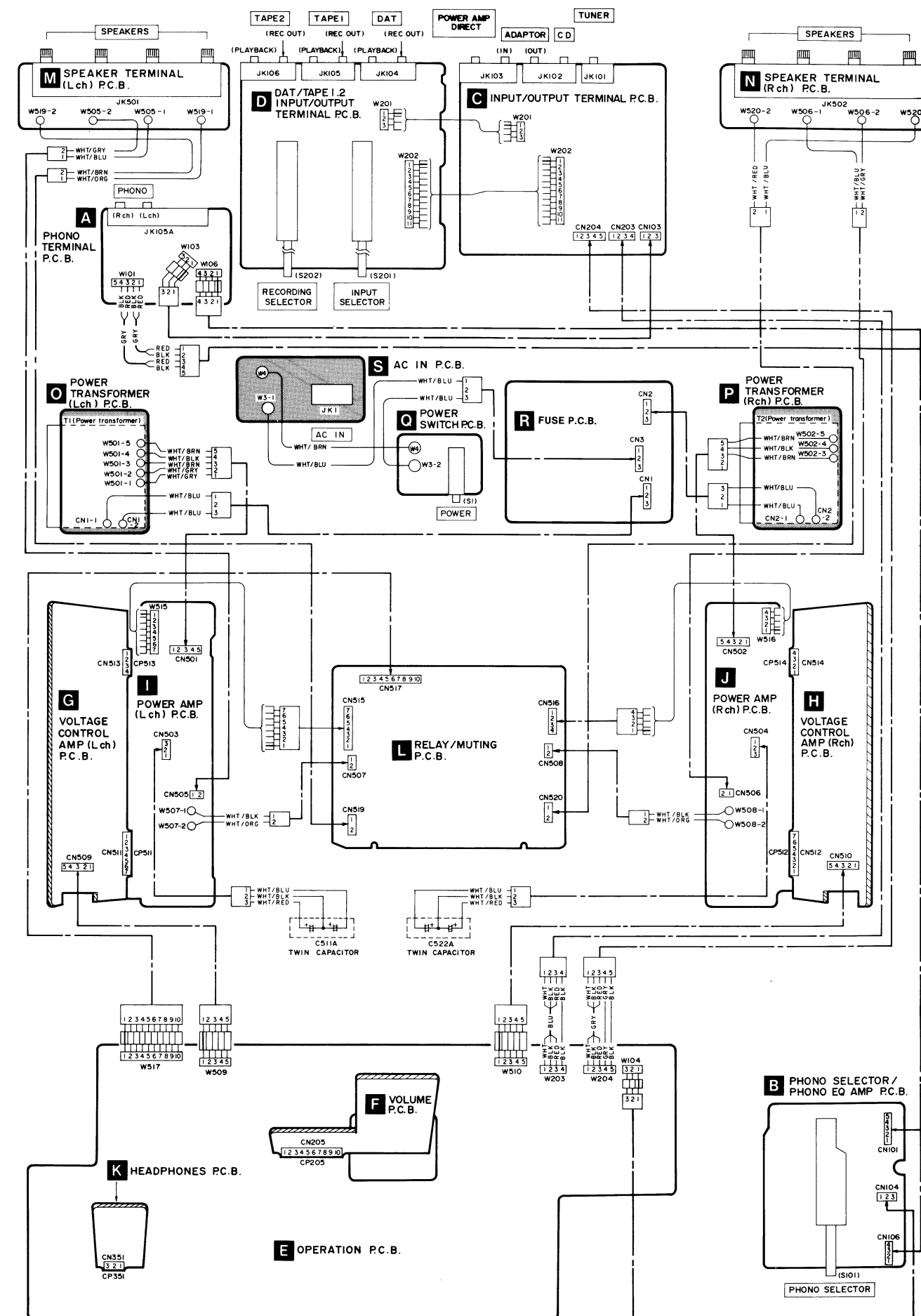


S AC IN P.C.B.



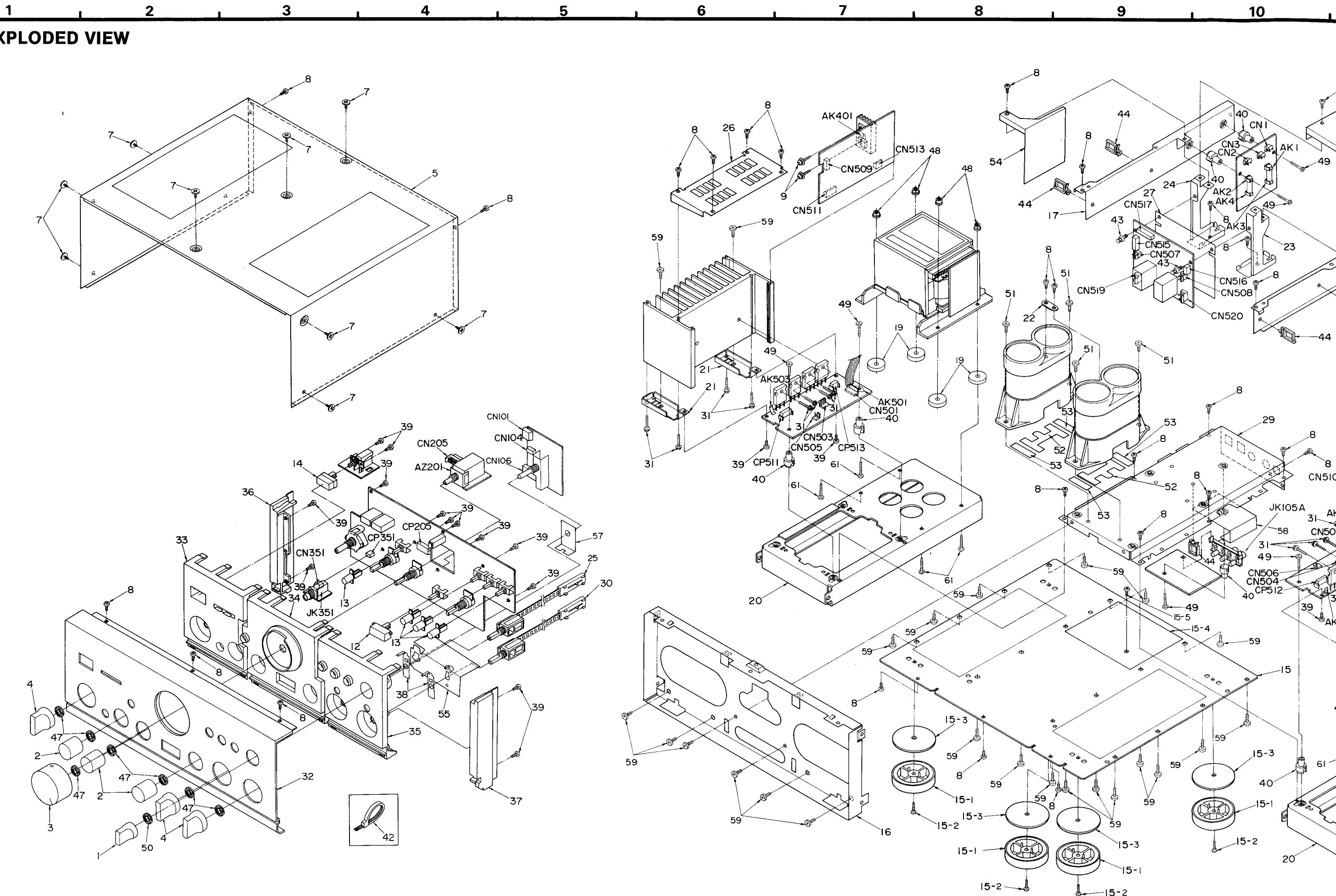
Q POWER SWITCH P.C.B.

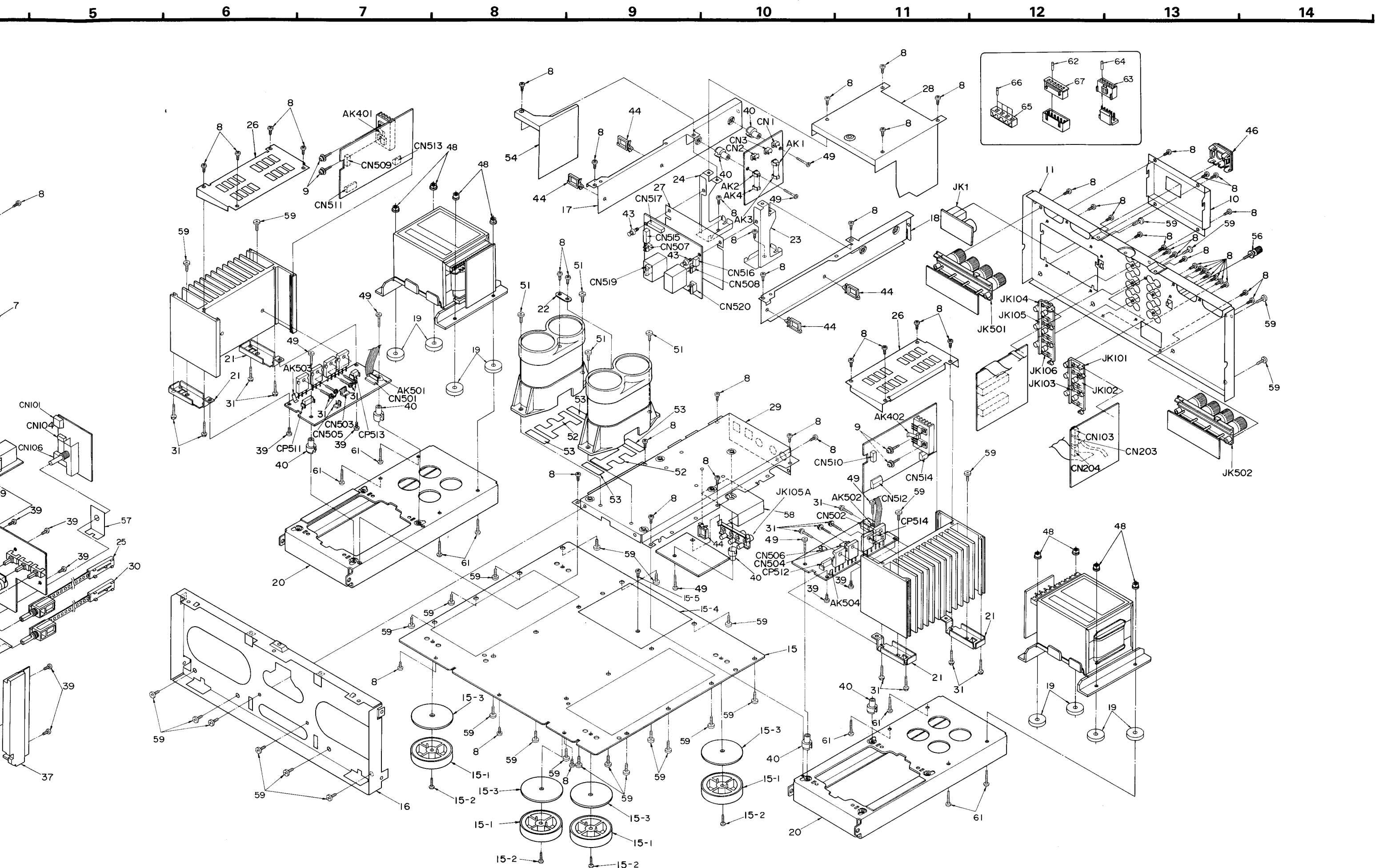




EXPLODED VIEW

A
B
C
D
E
F
G





REPLACEMENT PARTS LIST

Notes : * Important safety notice:

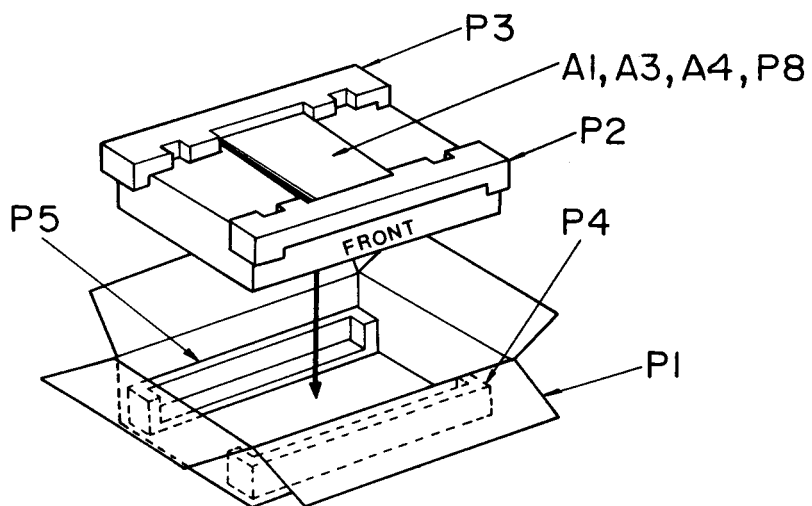
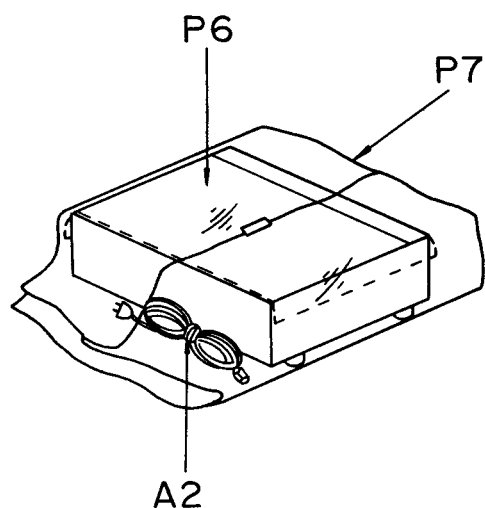
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* The parenthesized indications in the Remarks columns specify the areas. (Refer to the cover page for area.) Parts without these indications can be used for all areas.

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
		CABINET AND CHASSIS		39	XTB3+8JFZ	SCREW	
1	RGW0058-K	KNOB, PHONO SELECTOR		40	SHE187-2	P. C. B. SUPPORT	
2	RGW0059-K	KNOB, TONE CONTROL		42	SHR301	CORD CLAMPER	
3	RGW0060-K	KNOB, VOLUME		43	SHR415	LATCH	
4	RGW0061-1K	KNOB, SELECTOR		44	SHR9814	CORD CLAMPER	
5	RFKKUV900E-K	CABINET ASS'Y		46	SJS9231A	AC INLET COVER	
7	SNE2129-3	SCREW		47	SNE4021-1	NUT	
8	XTB3+8JFZ1	SCREW		48	SNE4065	NUT	
9	XYN3+F8	SCREW		49	XTB3+20JFZ	SCREW	
10	RGR0069B-A	SUB REAR PANEL		50	XNS8	NUT	
11	RGR0070D-A	REAR PANEL	(E)	51	XTB4+10FFZ	SCREW	
11	RGR0070D-B	REAR PANEL	(EB)	52	RFKFUV900AK	BOOST BAR ASS'Y 1	
11	RGR0070D-C	REAR PANEL	(EG)	53	RFKFUV900BK	BOOST BAR ASS'Y 2	
12	RGU0281	KNOB, DIRECT		54	RSC0115	SHIELD PLATE	
13	RGU0282	KNOB, TONE SELECTOR		55	RSC0142	SHIELD PLATE	
14	RGU0283-1K	KNOB, POWER		56	SNE2123	ERATH TERMINAL	
15	RFKJUV900EAK	CHASSIS ASS'Y		57	RSC0158	SHIELD PLATE	
15-1	SKL306	FOOT		58	RSC0161	SHIELD PLATE	
15-2	XTB4+12FFZ	SCREW		59	XTB4+8FFZ	SCREW	
15-3	SHG6405	FOOT RUBBER		61	XTB4+20FFZ	SCREW	
15-4	SMC1138-2	SHIELD PLATE		62	SJT783	PIN	
15-5	XTB3+8JFZ	SCREW		63	RJS3303	CONNECTOR(3P)	
16	RMA0249	FRONT ANGLE		63	RJS1A3202	CONNECTOR(2P)	
17	RMA0250	SIDE ANGLE(L)		63	RJS1A3404	CONNECTOR(2P)	
18	RMA0251	SIDE ANGLE(R)		63	RJS1A3505	CONNECTOR(5P)	
19	RMG0013	RUBBER, TRANSFORMER		64	RJT053	PIN	
20	RFKJUMA10E-A	TRANS CHASSIS ASS'Y		65	SJS5431	CONNECTOR(4P)	
21	RMQ0111	RADIATOR ANGLE		65	SJS5529	CONNECTOR(5P)	
22	RMQ0112-1	CAPACITOR ANGLE		65	SJS5337	CONNECTOR(3P)	
23	RMQ0113	ANGLE(R)		66	SJT785	PIN	
24	RMQ0114	ANGLE(L)		67	SJS5425	CONNECTOR(4P)	
25	RSQ0013	RELEASE (REC)		67	SJS5715	CONNECTOR(7P)	
26	RMV0036	SUB RADIATOR		67	SJS5331	CONNECTOR(3P)	
27	RMZ0079	INSULATION SHEET		67	SJS5523	CONNECTOR(5P)	
28	RSC0077-1	SHIELD CASE		67	SJS5025	CONNECTOR(10P)	
29	RSC0078-1	DAC CASE				PACKING MATERIAL	
30	RSQ0009-1	RELEASE (INPUT)		P1	RPG0676	PACKING CASE	
31	SNE2117-1	SCREW		P2	RPNO238A-4	PAD (FRONT/UPPER)	
32	RFKGUV900E-K	FRONT PANEL ASS'Y		P3	RPNO238B-4	PAD (BACK/UPPER)	
33	RFKNUV900AK	FRONT GLILLE ASS'Y A		P4	RPNO238C-4	PAD (FRONT/LOWER)	
34	RFKNUV900BK	FRONT GLILLE ASS'Y B		P5	RPNO238D-4	PAD (BACK/LOWER)	
35	RFKNUV900CK	FRONT GLILLE ASS'Y C		P6	SPH223	KRAFT PAPER	
36	RGK0207-2K	SIDE ORNAMENT(L)		P7	SPH6434	PROTECTION SHEET	
37	RGK0208-1K	SIDE ORNAMENT(R)		P8	SPB1061	PROTECTION BAG(F. B.)	
38	RMCO065	EARTH SPRING					

Ref. No.	Part No.	Part Name & Description	Remarks				
		ACCESSORIES					
A1	RFKSV900E-K	INST. MANUAL ASS'Y	(E)				
A1	RQT0723-D	INSTRUCTION MANUAL	(EG)				
A1	RQT0724-B	INSTRUCTION MANUAL	(EB)				
A2	SFDAC05E03	POWER CORD	△ (E, EG)				
A2	SJA193	POWER CORD	△ (EB)				
A3	RQA0013	WARRANTY CARD					
A4	RQCB0169	SERVICENTER LIST					

PACKING



REPLACEMENT PARTS LIST

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Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
		INTEGRATED CIRCUIT(S)		D309-314	MA29WA	DIODE	
				D315-318	MA29WA	DIODE	
				D321, 322	MA4180-M	DIODE	
				D325-328	MA185	DIODE	
IC101	UPC4570C	EQUALIZER AMP		D323	MA165	DIODE	
IC201	UPC4570C	TONE AMP		D329, 330	MA4110MTA	DIODE	
IC301	UPC4570C	VOLTAGE AMP		D351	MA4051MTA	DIODE	
IC302	M5218P	EXTEND ACTIVE SERVO		D352	LN014472PH	L. E. D.	
IC401, 402	M5218P	VOLTAGE/CURRENT MIRROR		D353	LN018472PH	L. E. D.	
IC501	AN7073	PROTECTION		D354	MA4030MTA	DIODE	
		TRANSISTOR(S)		D355	LN018305PH	L. E. D.	
				D356	1SR35200TB	DIODE	Δ
Q101-104	2SK369GR	TRANSISTOR		D401-404	MA165	DIODE	
Q201, 202	2SK389BG	TRANSISTOR		D405-408	MA29WA	DIODE	
Q301, 302	2SC2631RSTTA	TRANSISTOR		D409-412	MA4082MTA	DIODE	
Q303-306	2SA1123RSTTA	TRANSISTOR		D413-416	MA165	DIODE	
Q307-310	2SC2631RSTTA	TRANSISTOR		D501, 502	MA167	DIODE	
Q311, 312	2SA1123RSTTA	TRANSISTOR		D503	MA4160M	DIODE	
Q313	2SC3944AQRS	TRANSISTOR		D504	MA167	DIODE	
Q314	2SA1535AQRS	TRANSISTOR		D505	MA165	DIODE	
Q401, 402	2SA1123RSTTA	TRANSISTOR		D507, 508	MA165	DIODE	
Q403-406	2SC2631RSTTA	TRANSISTOR		D511-518	P300DLF	DIODE	Δ
Q407-410	2SA1123RSTTA	TRANSISTOR					
Q411-414	2SC2631RSTTA	TRANSISTOR				VARIABLE RESISTOR(S)	
Q415, 416	2SA1123RSTTA	TRANSISTOR					
Q417, 418	2SC1815BG	TRANSISTOR		VR201	RRV27J01A	VOLUME	
Q419, 420	2SC3311A-Q	TRANSISTOR		VR202	EWHFDA014G15	BALANCE	
Q421, 422	2SA1309A-R	TRANSISTOR		VR203, 204	EWX2XA000C15	BASS/TREBLE	
Q423, 424	2SC2631RSTTA	TRANSISTOR		VR401, 402	EVNMDAA00B52	VOLTAGE CONTROL ADJ.	
Q425, 426	2SA1123RSTTA	TRANSISTOR		VR403, 404	EVNMDAA00B52	CURRENT DRIVE ADJ.	
Q427, 428	2SC3944AQRS	TRANSISTOR					
Q429, 430	2SA1535AQRS	TRANSISTOR				THERMISTOR(S)	
Q501, 502	2SC1815BG	TRANSISTOR					
Q503, 504	2SC3944AQRS	TRANSISTOR		TH401, 402	ERTD2WHL104S	THERMISTOR	
Q505, 506	2SA1535AQRS	TRANSISTOR		TH501, 502	ERTD2WHL104S	THERMISTOR	
Q507, 508	2SC3182R	TRANSISTOR					
Q509, 510	2SA1265R	TRANSISTOR				COIL(S)	
Q511, 512	2SB1036R	TRANSISTOR					
Q513	2SA992EFPTA	TRANSISTOR		L1	SLQZ650MH49	COIL	Δ
Q515, 516	2SC3182R	TRANSISTOR		L101-104	RLQX101K-V	COIL	
Q517, 518	2SA1265R	TRANSISTOR		L501, 502	SLQY07G-40	COIL	
		DIODE(S)		L503, 504	SLQY18G-10	COIL	
						TRANSFORMER(S)	
D101, 102	MA165	DIODE					
D201	MA165	DIODE		T1, 2	RFKCUV900E-K	POWER TRANSFORMER	Δ (E, EG)
D301-308	MA165	DIODE		T1, 2	RFKCUV900EBK	POWER TRANSFORMER	Δ (EB)

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
		FUSE (S)		CP511, 512	SJS50778JQ	SOCKET (7P)	
				CP513, 514	SJS50478JQ	SOCKET (4P)	
						RELAY	
F1, 2	XBA2C20TB0	FUSE, 2A	△				
		SWITCH(ES)		RL201	RSYG5A237P12	RELAY	
				RL501, 502	RSY0004-1	RELAY	
S1	ESB8279V	POWER	△	RL503	RSYG5A237P12	RELAY	
S101	RSR2D001	PHONO SELECTOR				JACK(S)	
S201	RSS6B001	INPUT SELECTOR					
S202	RSS6D001	RECORDING SELECTOR					
S203	ESB68107	ADAPTOR		JK1	SJS9231-1B	JACK, AC IN	△
S204	ESB68107	MODE		JK101	SJF3068N	JACK, TUNER	
S205	ESB68107	LOUDNESS		JK102	SJF3069-4N	JACK, CD/ADPT OUT	
S206	ESB68107	TONE CONTROL		JK103	SJF3069N	JACK, ADPT IN/P. A. D	
S207	ESB68109	POWER AMP DIRECT		JK104	SJF3069N	JACK, DAT	
S351	RSR4B002	SPEAKERS		JK105	SJF3069N	JACK, TAPE 1	
		GND PART(S)		JK105A	SJF3061-17N	JACK, PHONO	
				JK106	SJF3069N	JACK, TAPE2	
AK1-4	EYF52BC	FUSE HOLDER		JK351	SJJD19	JACK, HEADPHONE	
AK401, 402	SUS227	GND SPRING		JK501, 502	RJH4403	JACK, SPEAKERS	
AK501, 502	SNE1004-1	GND PLATE					
AK503, 504	SUS227	GND SPRING					
		SHIELD PART(S)					
AZ201	RSQ0007-1	SHIELD PART					
		CONNECTOR(S) AND SOCKET(S)					
CN1-3	RJP1A4204-1	CONNECTOR (3P)					
CN101	SJT3513	CONNECTOR (5P)					
CN103	SJT3319	CONNECTOR (3P)					
CN104	SJT3321	CONNECTOR (3P)					
CN106	SJT3417	CONNECTOR (4P)					
CN203	SJT3415	CONNECTOR (4P)					
CN204	SJT3511	CONNECTOR (5P)					
CN205	RJU003K010M1	SOCKET (10P)					
CN351	SJT30345JQ	CONNECTOR (3P)					
CN501, 502	RJP1A3505	CONNECTOR (5P)					
CN503, 504	RJP1A3303	CONNECTOR (3P)					
CN505-508	RJP1A3202	CONNECTOR (2P)					
CN509, 510	SJT3511	CONNECTOR (5P)					
CN511, 512	SJT30745JQ	CONNECTOR (7P)					
CN513, 514	SJT30445JQ	CONNECTOR (4P)					
CN515	SJT3709	CONNECTOR (7P)					
CN516	SJT3415	CONNECTOR (4P)					
CN517	SJT3005	CONNECTOR (10P)					
CN519, 520	RJP1A4103	CONNECTOR (3P)					
CP205	RJT003K010M1	CONNECTOR (10P)					
CP351	SJS50378JQ	SOCKET (3P)					

RESISTORS & CAPACITORS

Notes : * Capacity value are in microfarads (uF) unless specified otherwise, P=Pico-farads (pF) F=Farads (F)
 * Resistance values are in ohms, unless specified otherwise, 1K=1,000(OHM) , 1M=1,000k(OHM)

Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks
		RESISTORS						
R101-104	ERDS2TJ102	1/4W 1K	R343, 344	ERDS2TJ223	1/4W 22K	R541	ERDS2TJ153	1/4W 15K
R105, 106	ERDS2TJ473	1/4W 47K	R345, 346	ERG2ANJP391S	2W 390	R543	ERDS2TJ223	1/4W 22K
R107, 108	ERDS2TJ221	1/4W 220	R347-350	ERDFS2VJ271T	1/4W 270	R544, 545	ERG2SJ681H	2W 680
R109, 110	ERDS2TJ220T	1/4W 22	R351	ERDS1FJ151	1/2W 150 Δ	R546	ERDS1FVJ821T	1/2W 820 Δ
R111-116	ERDAS3G272T	1/4W 2.7K	R352, 353	ERDS2TJ151	1/4W 150	R547-550	RREEMKR22SC	5W 0.22
R117, 118	ERDAS3G121	1/4W 120	R354	ERDS2TJ331	1/4W 330	R551, 552	ERG2SJ331H	2W 330
R119, 120	ERDS2TJ120T	1/4W 12	R355, 356	ERG1SJ222E	1W 2.2K	R555-558	RRECMKR22SC	5W 0.22
R121, 122	ERDS2TJ101	1/4W 100	R401, 402	ERDAS3G121	1/4W 120	R561-564	ERDS1FVJ6R8T	1/2W 6.8 Δ
R123, 124	ERDAS3G121	1/4W 120	R403, 404	ERDS2TJ224T	1/4W 220K	R565-568	ERDFS2VJ2R2T	1/4W 2.2
R125, 126	EROS2TKF5231	1/4W 5.23K	R405-408	ERDAS3G103T	1/4W 10K	R569-572	RREEMKR22SC	5W 0.22
R127, 128	EROS2TKG6802	1/4W 68K	R409-412	ERDAS3G102T	1/4W 1K			CAPACITORS
R129, 130	ERDS2TJ334	1/4W 330K	R413-416	ERDFS2VJ101T	1/4W 100			
R131, 132	ERDAS3G561	1/4W 560	R417-420	ERDS2TJ222	1/4W 2.2K	C1	ECKWKC103PF2	400V 0.01U Δ
R201-222	ERDAS3G471T	1/4W 470	R421-424	ERDFS2VJ561T	1/4W 560	C103, 104	ECBT1H102KB5	50V 1000P
R231, 232	ERDS2TJ332	1/4W 3.3K	R425, 426	ERDS2TJ104	1/4W 100K	C107, 108	ECEAOJU332E	6.3V 3300U
R233, 234	ERDAS3G222T	1/4W 2.2K	R427-432	ERDFS2VJ222T	1/4W 2.2K	C109, 110	ECQM1H222KV3	50V 2200P
R235	ERDS2TJ824	1/4W 820K	R433, 434	ERDFS2VJ332T	1/4W 3.3K	C111, 112	ECQM1H392J2	50V 3900P
R237, 238	ERDS2TJ223	1/4W 22K	R435, 436	ERDS2TJ393	1/4W 39K	C113, 114	ECQM1H103J2	50V 0.01U
R239, 240	ERDS2TJ183T	1/4W 18K	R437, 438	ERDFS2VJ102T	1/4W 1K	C115, 116	ECQM1H473J2	50V 0.047U
R241, 242	ERDAS3G472T	1/4W 4.7K	R439-442	ERDS2TJ223	1/4W 22K	C117, 118	ECA1HPXS010B	50V 1U
R243, 244	ERDAS3G124T	1/4W 120K	R443-446	ERDFS2VJ101T	1/4W 100	C119, 120	ECQM1H472J2	50V 4700P
R245, 246	ERDAS3G561	1/4W 560	R447, 448	ERDFS2VJ561T	1/4W 560	C121, 122	ECA1HPXS4R7B	50V 4.7U
R247, 248	ERDS2TJ224T	1/4W 220K	R449-452	ERDFS2VJ2R2T	1/4W 2.2	C123, 124	ECBT1H270JU5	50V 27P
R249-254	ERDAS3G472T	1/4W 4.7K	R453, 454	ERDFS2VJ681T	1/4W 680	C125, 126	ECBT1H102KB5	50V 1000P
R255, 256	ERDS2TJ221	1/4W 220	R455-458	ERDFS2VJ121T	1/4W 120	C127, 128	ECBT1H220JC5	50V 22P
R257, 258	ERDS2TJ224T	1/4W 220K	R459-462	ERDFS2VJ332T	1/4W 3.3K	C129, 130	ECBT1H121KB5	50V 120P
R259, 260	ERDS2TJ821	1/4W 820	R463, 464	ERDFS2VJ101T	1/4W 100	C131, 132	ECBT1H101KB5	50V 100P
R261, 262	ERDS2TJ472	1/4W 4.7K	R465, 466	ERDFS2VJ102T	1/4W 1K	C133	ECKR1H333ZF5	50V 0.033U
R263, 264	ERDS2TJ392T	1/4W 3.9K	R467, 468	ERDFS2VJ681T	1/4W 680	C201-222	ECBT1H181KB5	50V 180P
R265-268	ERDS2TJ223	1/4W 22K	R469, 470	ERDFS2VJ1ROT	1/4W 1	C231, 232	ECQM1H563J2	50V 0.056U
R269, 270	ERDS2TJ102	1/4W 1K	R471-474	ERDS1FVJ100T	1/2W 10 Δ	C233, 234	ECBT1H330J5	50V 33P
R271, 272	ERDS2TJ562	1/4W 5.6K	R501, 502	ERDFS2VJ332T	1/4W 3.3K	C235, 236	ECBT1H820KB5	50V 82P
R291	ERG2ANJP272S	2W 2.7K	R503, 504	ERDS2TJ103	1/4W 10K	C237, 238	ECQM1H222KV3	50V 2200P
R301, 302	ERDAS3G331T	1/4W 330	R505-508	ERDFS2VJ6R8T	1/4W 6.8	C239, 240	ECBT1H390J5	50V 39P
R303, 304	ERDS2TJ563	1/4W 56K	R509-512	ERDFS2VJ681T	1/4W 680	C241, 242	ECA1HPXS4R7B	50V 4.7U
R305-312	ERDFS2VJ121T	1/4W 120	R513, 514	ERDFS2VJ331T	1/4W 330	C243, 244	ECA1CPXS220B	16V 22U
R313-316	ERDS2TJ563	1/4W 56K	R515-518	ERDFS2VJ2R2T	1/4W 2.2	C245, 246	ECQV1H823J2	50V 0.082U
R317-320	ERDFS2VJ121T	1/4W 120	R519, 520	ERDS1FVJ100T	1/2W 10 Δ	C247, 248	ECQM1H153J2	50V 0.015U
R321, 322	ERDFS2VJ330T	1/4W 33	R521-524	RRECMKR22SC	5W 0.22	C249, 250	ECQM1H183J2	50V 0.018U
R323-326	ERDFS2VJ150T	1/4W 15	R525-528	ERDS1FVJ100T	1/2W 10 Δ	C251, 252	ECQM1H182J2	50V 1800P
R327, 328	ERDAS3G273T	1/4W 27K	R529, 530	ERDFS2VJ271T	1/4W 270	C253, 254	ECKR1H103ZF5	50V 0.01U
R329-332	ERDAS3G102T	1/4W 1K	R531, 532	ERDS2TJ153	1/4W 15K	C255	ECEA1EK100	25V 10U
R335, 336	ERDS2TJ153	1/4W 15K	R533, 534	ERDFS2VJ472T	1/4W 4.7K	C271, 272	ECKR1H151KB5	50V 150P
R337	ERDS2TJ102	1/4W 1K	R535	ERDS2TJ473	1/4W 47K	C301, 302	ECA1EPXS100B	25V 10U
R339, 340	ERDS2TJ102	1/4W 1K	R536	ERDS2TJ563	1/4W 56K	C303, 304	ECBT1H151KB5	50V 150P
R341	ERDS2TJ823T	1/4W 82K	R537	ERDS2TJ153	1/4W 15K	C305, 306	ECBT1H150JR5	50V 15P
			R538	ERDS2TJ103	1/4W 10K	C307, 308	ECBT1H151KB5	50V 150P
			R539	ERDS2TJ563	1/4W 56K	C309-312	ECCV2H680K	500V 68P
			R540	ERDS1FVJ682T	1/2W 6.8K Δ			

Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks
C313, 314	ECCD1H180KC	50V 18P	C407-410	ECA1EPXS470B	25V 47U	C512	ECFR1E223KR	25V 0.022U
C315, 316	ECA0JPXS221B	6.3V 220U	C411-414	ECA1EPXS100B	25V 10U	C513	ECEA0JK470	6.3V 47U
C317-320	ECA2APXS010B	100V 1U	C415, 416	ECBT1H221KB5	50V 220P	C514, 515	ECEA1EK4R7	25V 4.7U
C321, 322	ECKT1H102KB	50V 1000P	C417, 418	ECKR1H103ZF5	50V 0.01U	C517-520	ECQM1H683KV3	50V 0.068U
C323, 324	ECKR1H103ZF5	50V 0.01U	C419-422	ECEA1HK010B	50V 1U	C521-524	ECA2APXS101E	100V 100U
C325	ECEA1EK100	25V 10U	C423, 424	ECQM1H822JZ	50V 8200P	C527, 528	ECQE2104KS	125V 0.1U
C326	ECBT1H821KB5	50V 820P	C425-428	ECA2APXS010B	100V 1U	C529, 530	ECKR1H103ZF5	50V 0.01U
C327, 328	ECEA1EK100	25V 10U	C429-432	ECA0JPXS101B	6V 100U	C537, 538	ECEA1HK010B	50V 1U
C329, 330	ECA1HPXS4R7B	50V 4.7U	C433, 434	ECBT1H331KB5	50V 330P	C539-542	ECHR1H103JZ3	50V 0.01U
C331, 332	ECA2APXS100	100V 10U	C435, 436	ECCD1H150KC	50V 15P	C543-550	ECQV1H823JZ3	50V 0.082U
C351	ECEA1EU101	25V 100U	C501-504	ECBA1H681KB5	50V 680P	C551A	ECED71M123T	71V 12000U
C353, 354	ECKT1H102KB	50V 1000P	C505, 506	ECKR1H103ZF5	50V 0.01U	C551	ECKR1H102KB5	50V 1000P
C401, 402	ECBT1H221KB5	50V 220P	C507-510	ECQM1H683KV3	50V 0.068U	C552A	ECED71M123T	71V 12000U
C403-406	ECEA1EBZ220B	25V 22U	C511	ECEA0JU331B	6.3V 330U	C552-554	ECKR1H102KB5	50V 1000P